Integrating Neandertal Legacy:
From Past to Present CA 19141

A CATALOGUE OF NEANDERTAL SITES:

Technical Report

Edited by **Ivor Janković, Stefano Benazzi, Katerina Harvati, Francesca Romagnoli, Ron Pinhasi, Florent Rivals, Jean-Luc Voisin, Andrew W. Kandel, Lia Vidas, Carolin Röding, Giulia Marciani, Pere Gelabert**

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Table of Contents

It has been suggested by some that our species *Homo sapiens sapiens* may have contributed to, or even caused, Neandertal extinction through violent interactions at the end of the so-called Middle-to-Upper Palaeolithic transition. While this is far from proven, what we unfortunately do acknowledge, is that our behavior has caused the destruction of many parts of Neandertal legacy – some of the sites and valuable fossil and other finds have been lost or destroyed due to war(s) and clashes. Even today, as we write these words, we are unsure of the provenience or state of some of the fossils and sites. It is our sincere hope that our behavior will not cause a loss of this scientific heritage and legacy for future generations of scholars compared to what we inherited from previous generations of scientists.

Introduction

What is a Neandertal? Would it, by any other name, sound as sweet? Over a century and a half of scientific investigation of these interesting prehistoric peoples and different aspects of their legacy resulted in a vast accumulation of data on their biology, technology, economy and lifestyle, and various other aspects of their daily lives and deaths. Indeed, the term Neandertal (or Neanderthal) is almost a daily occurrence in popular press (and not always related to scientific issues). Alongside dinosaurs, Neandertals are probably the most famous prehistoric beings – everyone's favorite "cave man", the ever-present brute from the past. It is not the goal of this publication to deal with the Neandertal image (although this is one of the important topics our iNEAL COST Action working group 4 has been involved in). Neither is specific attention given to the debate and views of their taxonomy (i.e. whether they are a separate, sister species, *Homo neanderthalensis*, or whether we should see them as a subspecies of our own species and refer to them as *Homo sapiens neanderthalensis*). These, although very important, issues of phylogeny and taxonomy of Pleistocene hominins, is not discussed in this publication. What we tried to achieve is the gathering of the most important information relevant for the study of Neandertals. Although we tried to collect data on as many sites that yielded Neandertal fossil remains as possible, it soon became clear that this task would surpass the duration of our Action. In addition, it soon became clear that there are in fact more sites than even the professionals realise – some yielded single teeth or partial bones, while others may still be in the process of excavation, or yet unpublished. Further, the unfortunate events we daily witness made our communication with a number of colleagues that may have more accurate information relevant for this publication very hard or impossible – resulting in incomplete or unreliable datasets. We fully intend and are committed to continue collecting data on Neandertal legacy and will update this catalogue in the future. We hope that more colleagues will join us in this effort.

In this, we defined numerical codes that assemble what we considered at this time the most important information on various biocultural features (and selected other relevant data) that is also comparable in geographical and temporal dimensions. Further, we decided to limit this volume to the sites that yielded physical remains of Neandertals (their fossil teeth and skeletal remains). This selection was not based on greater importance given to these sites or to hominin fossil remains compared to other archaeo-paleonthological categories, but simply on time constraints (sites with archaeological remains associated to Neandertals and that did not yield human bones are much more numerous). We certainly hope that our future projects will result in an additional volume with Neandertal sites from which thus far only cultural, and other types of data are known but no Neanderthal fossils. Surely, their cultural legacy also adds very important insight into the Neandertal world. However, the bones and teeth are always much rarer findings at archaeological sites than the remains of stone tools, and even animal bones accumulated by human activities in the past. Although far from the final word on Neandertal fossil sites, we hope that this publication will save our colleagues many hours of

frustrating search for information and provide much easier and faster means of planning their research.

Of course, our codes provide just general information. Yet, as anyone who has done any type of archaeological or paleoanthropological research knows all too well, the most important and sometimes most time consuming and often frustrating step is to find information on, for example, what type of data is available at which site (which skeletal part, what faunal taxa, what basic cultural association, timeframe of assemblage(s), what type of analytical work has been done so far, location of the site, where the material is stored, and so on). More detailed information and insight is given in the reference list for each site.

Our work is based on the effort of previous authors that tried to collect similar forms of data for prehistoric human remains and sites. Probably the best known and most used catalogue of fossil hominin data with codes (or "index cards") collecting various forms of information about human fossil record is the 1971 *Catalogue of Fossil Hominids* by K.P. Oakley, B.G. Campbell, and T.I. Molleson. Further, a very useful companion, albeit geographically limited to Italy, the more recently edited volume *Catalogue of Italian Fossil Human Remains from the Palaeolithic to the Mesolithic* by G. Alciati, V. Pesce Delfino, and E. Vacca (2005). We have used some of the codes from these two volumes (in somewhat modified forms) and added new ones we thought relevant for Neandertal scholars (i.e. those that give information on genomic research).

Collecting information for this publication was the work of many colleagues from many countries that were once a part of the Neandertal world. This has made our editorial work much easier and we are forever grateful for their time and knowledge dedicated to this project. All contributors for each of the sites are listed individually, and the whole list with their affiliations is given at the end of this publication.

Our work would not be possible without the help and utilization of the excellent ROAD database. This online database covering Africa and Eurasia between three million and 20,000 years ago provided valuable information about Neandertal sites including locality information, stratigraphy, dating, and of course the fossils and finds themselves.

This publication presents a technical report in the form of a catalogue of the main types of data present for selected Neandertal sites, and is one of the major results of four years of meeting and discussing various types of Neandertal legacy within the framework of the COST (European Cooperation in Science and Technology) Action CA19141 "Integrating Neandertal Legacy: From Past to Present" (iNEAL) (https://inealcost.inantro.hr/). During the course of this Action, more than 300 scholars and students were involved in its various activities (meetings, workshops, training schools, short-term scientific missions, round tables, conference

sessions, presentations, and other forms of communication and dissemination). In addition, the Action resulted in new collaborative projects, publications, presentation at conferences, Master's theses, disseminations for the public, exhibitions, and other types of activities related to Neandertals. On a personal note, the Action has resulted in new friendships, thus building a lasting bridge among scientists of various disciplines and backgrounds, and from various countries.

On the behalf of iNEAL
Editors

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A CATALOGUE OF NEANDERTAL SITES:

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1. **NAME OF THE SITE.** If site is refered to by several names in the literature, all names are listed with the first one being the most commonly used. If sites are sometimes refered using alternate spelling or alphabet, such names are also listed.

2. **DESCRIPTION OF THE SITE AND GEOGRAPHICAL POSITION.** Country, geographical co-ordinates, latitude and longitude, accurate at least to the minute (decimal).

3. **NAME OF THE RESEARCHER OR THE DISCOVERER AND DATE OF THE DISCOVERY.** Name the original discoverer and/or person who originally studied the human remains.

4. **GEOLOGICAL TYPOLOGY OF THE SITE (ALLUVIAL DEPOSITS, LOESS, OCCUPATION DEPOSITS, CAVE DEPOSITS, OTHER).**

5. **PRESENCE OF BURIALS (YES/NO/UNCLEAR).** Descriptive, including a list which fossil(s) are a part of burials.

6. **STRATIGRAPHIC INFORMATION FOR ALL HUMAN REMAINS.**

7.1 **LITHIC INDUSTRY OR INDUSTRIES: TECHNOCOMPLEX (MOUSTERIAN, MICOQUIAN, MICRO-MOUSTERIAN, TRANSITIONAL, OTHER, NOT STUDIED).**

7.2 **TECHNOLOGY: KNAPPING (LEVALLOIS, DISCOID, LAMINAR/BLADE, LAMELLAR/BLADELET, EXPEDIENT/FLAKE, QUINA, BIFACIAL, OTHER, NOT STUDIED).**

7.3 **OSSEOUS INDUSTRY (BONE, ANTLER, TEETH, HORN).** Only if modified.

7.4 **WOOD (YES/NO).** Noted if modified.

7.5 **SHELL (YES/NO).** Noted if modified.

7.6 **PIGMENTS (YES/NO).**

7.7 **FEATURES (FIREPLACE, OTHER STRUCTURES).**

8.1 **FAUNA (LARGE MAMMAL, SMALL MAMMAL, BIRDS, REPTILE/AMPHIBIANS, FISH, MOLLUSCS, NOT STUDIED).**

8.2 **FLORA (HERBACEOUS, SHRUBS/TREE, FUNGI).**

9.1 **ABSOLUTE DIRECT DATING ON HUMAN REMAINS (YES/NO).**

9.2 **ABSOLUTE DATING OF THE DEPOSIT OR ASSOCIATED MATERIALS (C14, OSL, ESR, U-TH, OTHER).**

9.3 **RELATIVE DATING.** Method of dating and stratigraphic info is indicated.

10. **HUMAN REMAINS, (NAME AND UNIQUE ID NUMBER(S)).** If single specimens are refered to by different names or ID numbers in various publications, this is indicated and all names listed. If MNI assesment was made, it is noted.

10.1 **SEX.**

10.2 **AGE.** For sex and age diagnostic criteria/method is noted.

10.3 **INVENTORY AND STATE OF SKELETAL REMAINS.** Ordered in a cephalo-caudal direction with an indication of the state of presevation of the remains, reported separately for the right and left sides, according to the preservation: i, intact; d, damaged; f, fragmented; ff, very fragmented.

10.4 **DENTITION.** Free teeth named singularly (I1, I2, C, P3, P4, M1, M2, M3 for permanent dentition, and dI1, dI2, dC, dM1, dM2 for the deciduous dentition, with the superscript numbers indicating maxillary, and subscript indicating mandibular teeth and prefix L or R indicating side).

10.5 **PATHOLOGIES.** Pathologies are noted for specimens.

11. **ADDRESS OF THE INSTITUTIONS THAT HOUSE THE REMAINS.** If material (human remains and cultural remains listed under codes 7, 8, and 10) is stored at several institutions, all institutions are listed.

12. **ADDRESS OF THE INSTITUTIONS THAT HOUSE CASTS AND/OR CAST MOULDS.** A list of Institutions with casts/mould that can be used in research.

13. **WEB SITES AND OTHER DIGITAL REPOSITORIES.** Addressess of web sites and other repositories where digital images (e.g. CTscans, radiographs etc.) are stored.

14.1 **SOURCE OF DNA (COPROLITE, BONE, SEDIMENT, CALCULUS).**

14.2 **SAMPLE ID (FROM MENU WITH EXISTING SAMPLES AND LAYERS).**

14.3 **STORED AT (LOCATION).**

14.4 **PUBLIC DATA REPOSITORY (LINK).**

14.5 **TYPE OF DATA (MITOCHONDRIAL, SHOTGUN, CAPTURE).**

14.6 **UDG TREATMENT: 3 OPTIONS: FULL/PARTIAL/NONE.**

14.7 **GENOMIC COVERAGE: SHOTGUN (0-0.5X, 0.5-1X, 1-5X, >5X).**

14.8 **CAPTURE COVERAGE: POSITIONS (0-20K, 20-50K, 50-100K, 100-250K, 250-500K, 500-750K, 750-1000K, 1M-2M, >2M).**

14.9 **MOLECULAR SEX: M/F.**

14.10 **KINSHIP (1ST DEGREE RELATIVES, 2ND DEGREE RELATIVES).**

15. **STABLE ISOTOPE STUDY.** Isotope used in the study is noted.

16. **PALAEOPROTEOMIC STUDIES.** Specimen and type of analysis is noted.

17. **MAIN PUBLICATIONS.** Most important publications, including the first or original descriptive publications. A type of data in the publication is noted (P for publications on physical anthropology, A for publications on archaeology, Z for zooarchaeology, S for stable isotopes, G for genomic data, R for raw material studies, E environmental, D for dating, Str for stratigraphic data, Pro for proteomic data.

18. **NOTES.**

Code data collected by: Jean-Luc Voisin

1. **ABRI DE LA CAVE**, La Cave, Abri de Chateaudouble
2. Collapsed rock shelter close to the village of Moulins-sur-Tardoire, Charente, France. 23 km East from Angoulême; 45°40’ N, 0°25’ E.
3. Mrs and Mr Kelley, March 4th 1928.
4. Rock shelter deposits.
5. No
6. Two units and tree layers, the human remains have been found in the upper layer.
7.1 “Advanced” Mousterian but some possible admixture of blade tools from overlying horizon.
7.2 No data
7.3 No
7.4 No
7.5 No
7.6 No
7.7 One fireplace in the upper layer, associated to the human remains and Mousterian artifacts.
8.1 Large mammals (but not studied).
8.2 No
9.1 No
9.2 No
9.3 No
10. La Cave 1; La Cave 2.
10.1 –
10.2 La Cave 1: adult (no additional information), La Cave 2: juvenile (deciduous tooth).
10.3 La Cave 1: skull (ff), 3 R phalanges (Kelley & Kelley have written that there are many more human remains, but with no further details).
10.4 La Cave 1: LP^4; La Cave 2: dM^1.
10.5 –
11. Musée de l’Homme, Palais de Chaillot, 17, place du Trocadéro, 75116 Paris, France.
12. –
13. –
14.1 No
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No

17. Kelley A., Kelley M. (1928), Gisement moustiérien nouvellement découvert à La Cave (Vilhoneur) (Charente). *L’Anthropologie (Paris)* 38, 348. A; Vallois H.V. (1960), Répertoire des Hommes de Néandertal en France. *Zeitschrift für Morphologie und Anthropologie* 50 (2), 125-135. http://www.jstor.org/stable/25754619. P
18. The village of Moulins-sur-Tardoire did not exist before 2019. It is the result of the fusion of two villages: Vilhonneur and Rancogne.

Code data collected by: Jean-Luc Voisin

1. **ABRI PIÉ-LOMBARD**

2. Near the village of Tourettes-sur-Loup (Alpes Maritimes), 25 km North of Nice, France; 43°42'2"N, 7°2'45"E.

3. A. Mellira 1962; P.J. Texier 1970s and 1980s; last excavation in 1996 after illegal excavations.

4. Cave deposits.

5. No

6. Groupe II, layer f.

7.1 Mousterian.

7.2 Levallois.

7.3 No

7.4 No

7.5 No

7.6 No

7.7 No

8.1 Large mammals, small mammals, birds, reptiles, amphibians.

8.2 No

9.1 No

9.2 TL, Mousterial levels, 67 000 to108 000 years with a mean at 70 000 years ± 7 7000 years (Valladas et al. 1987); ESR, on stalagmitic floor, 147 000 ± 10 000 years and 130 000 ± 20 000 years (Yokoyama et al. 1983).

9.3 By stratigraphy with Mousterian layers (d, e, e1, f and g) under upper Paleolithic layers (a, b and c), undated.

10. Pié-Lombard 1, Pié-Lombard 2.

10.1 –

10.2 2-4 years old (wear stage, absence of roots resorption).

10.3 –

10.4 Pié-Lombard 1: RdI^{1}; Pié-Lomabrd 2: RdI_{1}.

10.5 No

11. Laboratoire Départemental de Préhistoire du Lazaret: grotte du Lazaret, 33 bis Boulevard Franck Pilatte, 06300, Nice, France.

12. –

13. –

14.1 No

14.2 –

14.3 –

14.4 –

14.5 –

14.6 –

14.7 –

14.8 –

14.9 –

14.10 –

15. No

16. No

17. Gerber J.-P. (1973) La faune des grands mammifères du Würm ancien dans le Sud-Est de la France. PhD. Université de Provence, 310. Z; Lebreton V., et al. (2007) Potentiels et limites de l'analyse pollinique de spéléothèmes quaternaires: applications à la reconstitution de l'environnement végétal de l'Homme préhistorique sur le pourtour Nord-Méditerranéen. *Quaternaire*, 18(2), 153-174. E; Mourer-Chauviré C. (1975) Les oiseaux du Pléistocène moyen et supérieur de France. PhD. Université Claude-Bernard Lyon, 2 vol. Z; Renault-Miskovsky J., Texier P.-J. (1980) Intérêt de l'analyse pollinique détaillée dans les concrétions de grottes. Application à l'Abri Pié-Lombard (Tourettes-sur-Loup, Alpes-Maritimes). *Bulletin de l'Association Française pour l'Etude du Quaternaire*, 3, 129-134. E; Texier P.-J. (1974) L'industrie moustérienne de l'Abri Pié-Lombard (Tourettes-sur-Loup, Alpes-Maritimes). *Bulletin de la Société Préhistorique Française*, 6, 429-448. A; Texier P.-J., et al. (2011) l'abri Pié Lombard à Tourrettes-sur-Loup (alpes-maritimes): anciennes fouilles, nouvelles données. *Bulletin du Musée d'anthropologie préhistorique de Monaco*, 51, 19-49. P, A, Z, E, D; Valladas H., et al. (1987) Datations par la thermoluminescence de gisements moustériens du Sud de la France. *L'Anthropologie* 91(1), 211-226. D; Yokoyama Y., et al. (1983) ESR dating of stalagmites of the Caune de l'Arago, the Grotte du Lazaret, the Grotte du Vallonnet and the abri Pié-Lombard: a comparison with the U-Th method. In: Third specialist seminar on TL and ESR dating, Helsingør, Denmark, 1982, PACT, 9, part II, 381-389. D

Code data collected by: Jean-Luc Voisin

1. **ABRI ROUSSEAU**, Angles sur l'Anglin
2. Rock shelter close to the village of Angles sur l'Anglin, Vienne, France. 33 km SE from Châtellerault, France; no coordinates.
3. L. Rousseau at the end of the 19th century (discovery of the rock shelter); L. Pradel 1958 (first excavation).
4. Cave deposit.
5. No
6. Layer 3.
7.1 Mousterian.
7.2 Flake.
7.3 No
7.4 No
7.5 No
7.6 No
7.7 None
8.1 Not studied.
8.2 No
9.1 No
9.2 No
9.3 No
10. One tooth with no catalogue number.
10.1 –
10.2 Adult (size and morphology of the tooth).
10.3 –
10.4 LI^1
10.5 –
11. Centre Régional d'Archéologie de Poitiers = DRAC Nouvelle Aquitaine (unsure).
12. –
13. –
14.1 No
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No
17. Patte, E. (1960), Découverte d'un néandertalien dans la Vienne. *L'Anthropologie (Paris)*, 64 (5-6), 512-517. P, R; Pradel L. (1965), Les abris moustériens Rousseau et du Dr Sabourin, commune d'Angles-sur-l'Anglin (Vienne). In *Congrès Préhistorique de France,*

XVIe session, Monaco, 971-988. A. Str; Primault, J. (2003), *Exploitation et diffusion des silex de la région du Grand-Pressigny au Paléolithique*. Ph.D. Université de Nanterre – Paris X, 362. A
18. The name Angles sur l'Anglin should be avoided because of the many prehistoric sites, some of them famous, surrounding the village of Angles sur l'Anglin).

Code data collected by: Giulia Marciani, Erica Piccirilli, Marco Peresani, Stefano Benazzi

1. **ALTAMURA**, Grotta di Lamalunga, Lamalunga cave
2. Altamura village, Bari, Italy; entrance opening at 455 m asl (Martimucci and Perrucci, 2000); 40°52'21" N, 16°35'17" E.
3. Speleological club C.A.R.S. (Centro Altamurano Ricerche Speleologiche) and speleo club C.A.I. (Club Alpino Italiano) from Bari, fall of 1993 (discovery), V. Pesce Delfino and E. Vacca October 8th 1993 (proposal of Palaeolithic attribution of the remains).
4. Karstic cave (Pieri, 1995; Agostini, 1996).
5. No
6. No
7.1 No
7.2 No
7.3 No
7.4 No
7.5 No
7.6 No
7.7 No
8.1 Large mammals (Tagliacozzo, 1995).
8.2 No
9.1 172 ± 15 ka to 130.1 ± 1.9 ka U/Th on a 5 mm-thick coralloid overgrowth covering the end of a short bone (ABS3); and a 10 mm-thick coralloid overgrowth covering the naturally broken stalagmite (ABS5). (Lari et al., 2015).
9.2 Branca and Voltaggio (2011): 25 U/Th, speleothem formation between 189 ± 29 and 172 ± 15 thousand years ago (ka), a second phase: between 45.9 ± 1.7 and 34.4 ± 1.5 ka; outside of these ranges, two dates were recorded: 133 ± 9 ka and 98.7 ± 4.4 ka (Lari et al., 2015).
9.3 N/A
10. Altamura 1.
10.1 Male (pelvic morphology and robusticity).
10.2 Adult (morphology of pelvis and skull, dental wear).
10.3 Skull (i), mandible (i), humeri (i/i), ulna ? (i), radius ? (i), ilei (i/i), femora (i/i), tibiae (i/i), fibulae (i/i). Several rib elements are recognizable, at least one vertebral body and a carpal element.
10.4 All the teeth present apart from RP^3 and RP_3, R and L I_1, LI_2, LM^1.
10.5 –
11. The skeleton lies in a small chamber known as the "Apse of the Man" (Apse), situated at the north-western end of the Lamalunga karst system.
12. –
13. Profico et al. 2023; Buzi et al 2024 provide supplementary materials on the skull (images of the digital reconstruction). The Website of the Museum of Altamura provides the reconstruction of the Fossil. https://www.uomodialtamura.it/
14.1 Fragment of bone (part of the right scapula; Lari et al., 2015)
14.2 The consensus sequence was deposited in GenBank under the accession number KJ888153 (Lari et al., 2015).

14.3 –
14.4 https://www.ncbi.nlm.nih.gov/nuccore/KJ888153
14.5 mtDNA (Lari et al., 2015)
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. –
16. –
17. AA VV. (1996), *L'Uomo di Altamura e la Grotta di Lamalunga: immagini.* Ed. Soprint. Archeol. della Puglia and Università degli Studi di Bari. A.B.A.C.O., Forlì. A, P; AA VV. (1997), *L'Uomo di Altamura: dal fossile al futuro.* Soprintendenza Archeologica della Puglia, Università degli Studi di Bari, Regione Puglia, Comune di Altamura, Provincia di Bari, Comune di Bari ed.s, CD-rom. A, P; Agostini, S. (1996) Aspetti Geologici della Grotta di Lamalunga. In: *L'Uomo di Altamura e la Grotta di Lamalunga: immagini.* Ed. Soprint. Archeol. della Puglia and Università degli Studi di Bari. A.B.A.C.O., Forlì. A; Buzi, C., et al. (2024), Virtual paleoanthropology in karstic environments. The challenging case of the Neanderthal skeleton from Altamura (southern Italy). *Quaternary Science Reviews* 338, 108833. P; Di Vincenzo, F., et al. (2019), Distinct among Neanderthals: the scapula of the skeleton from Altamura, Italy. *Quaternary Science Reviews*, 217, 76-88. P; Lari, M., et al. (2015), The Neanderthal in the karst: First dating, morphometric, and paleogenetic data on the fossil skeleton from Altamura (Italy). *Journal of Human Evolution*, 82, 88-94. doi: 10.1016/j.jhevol.2015.02.007. P, G, D; Marvulli, N. (1993), L'esplorazione della Grotta di Lamalunga e la scoperta dell'Uomo Arcaico di Altamura. *Altamura, Riv. Storica/Bollettino A.B.M.C.,* 35: 260-284. A; Martimucci, V., Perrucci, G. (2000), Grotta di Lamalunga: rilievo topografico e restituzione tridimensionale. *SPELAION 2000*, Altamura 1-3 dicembre. A; Pesce Delfino, V., Vacca, E. (1993), An Archaic human skeleton discovered at Altamura (Bari, Italy). *Riv. Antrop.,* 71, 249-257. P; Pesce Delfino, V., Vacca, E. (1995) The Altamura Human Skeleton: discovery and in situ examination. In: *Homo erectus heidelbergensis von Mauer – Kolloquium I*, 20 – 22 Januar 1995. K. W. Beinhauer, R. Kraatz und G. A. Wagner Ed. J. T. Verlag, Sigmaringen, 1996. P; Pieri, P. (1995), La grotta di Lamalunga nel quadro geologico e morfologico delle Murge. In: *La Grotta di Lamalunga, Atti I° Conf. Citt.* (18 Dicembre 1993), Ed. Città di Altamura – Assess. Cultura and MBBCCAA – Soprint. Archeol. Puglia, Altamura. A; Profico, A., et al. (2023), Virtual excavation and analysis of the early Neanderthal cranium from Altamura (Italy*). Commun Biol* 6, 316. https://doi.org/10.1038/s42003-023-04644-1. P; Riga, A., et al. (2020), In situ observations on the dentition and oral cavity of the Neanderthal skeleton from Altamura (Italy). *PLoS ONE*, 15(12): e0241713. https://doi.org/10.1371/journal.pone.0241713. P
18. The remains were found embedded in situ within the Grotta di Lamalunga, in a remarkable state of preservation, with most – if not all – skeletal elements having collapsed in place after the death of the individual. The cranium is cemented upside down within a speleothem curtain, with its anterior part facing the Apse and the rear and base facing a narrow cavity known as the "Back-chamber." This arrangement means that half of the cranium is visible from the Apse, while the other half is accessible

only through indirect inspection with probes. In 2017, a reconstruction of the Altamura Man was unveiled at the Museo Nazionale di Altamura. Using digital reproduction techniques, including laser scanning and photogrammetry, the brothers Kennis created a life-sized model based on the cranium's morphological data. To digitally capture the shape of the cranium, Profico et al. (2023) employed two different methodologies. The front side (face and frontal bone, FF), which is visible from the Apse, was acquired via laser scanning using a Konica Minolta range7 at a resolution of 40 µm. The back portion (palate, cranial base, and most of the cranial vault, BP) was acquired via photogrammetry using a GoPro camera mounted on a handheld probe. While the fossil still remains in the cave, advances in technology have enabled extensive studies of the Altamura Man.

Code data collected by: Ella Been and Omry Barzilai

1. **AMUD CAVE**
2. Israel, Galilee, 32°31'19" N, 35°17'60" E.
3. H. Watanabe 1960 (discovery), H. Suzuki 1961-1964 (excavations), E. Hovers and Y. Rak 1991 – 1994 (excavations).
4. Cave deposits.
5. Yes – Amud 1 and Amud 7.
6. Unit B 1/6 (Amud I, 8, 16), Unit B 2/8 (Amud II, III, 7, 9, 17, 18), Unit B4 (Amud IV), Unit B1/6-B2/7 (Amud 5), Unit 2/10 (Amud 10, 12, 13), Unit B 2/7 (Amud 11), disturbed/intrusive (Amud 6, 14, 15).
7.1 Mousterian.
7.2 Levallois, Expedient flake (Ohnuma, 1992; Hovers, 1998).
7.3 No
7.4 No
7.5 No
7.6 No
7.7 Fireplace.
8.1 Large mammals.
8.2 No
9.1 No
9.2 ESR and TL for sub-units B2 and B1: later part of the MIS 4/3, transition and sub-unit B4 within MIS 4 (Valladas et al. 1999; Rink et al. 2001). Amud B1 (ESR): 53 ± 7 ka; Amud B1 (TL): 57.6 ± 3.7 ka; Amud B2 (ESR): 61 ± 9 ka; Amud B2 (TL): 56.5 ± 3.5 ka; Amud B4 (ESR): 70 ± 11 ka; Amud B4 (TL): 68.5 ± 3.4 ka.
9.3 –
10. Amud I, Amud II, Amud III, Amud IV, Amud 5, Amud 6, Amud 7, Amud 8, Amud 9, Amud 10, Amud 11, Amud 12, Amud 13, Amud 14 (disturbed context), Amud 15 (disturbed context), Amud 16, Amud 17, Amud 18.
10.1 Amud I: male (overall morphology and size).
10.2 Amud I, II, 9, 13, 14, 17: adults (bone size and morphology, tooth maturation and wear); Amud III: juvenile, 4 years (teeth development); Amud IV: juvenile, 3 years (cranial sutures); Amud 5: infant, 6-9 months (size); Amud 6: neonate (size); Amud 7: infant, 10 months (size); Amud 8: juvenile, 8 years (teeth development); Amud 10: infant (size); Amud 11: juvenile, 7 years (teeth development); Amud 12: infant (size); Amud 15: infant (size); Amud 16: infant, 18 months (size); Amud 18: infant (size) (Hovers et al. 1995).
10.3 Amud I: complete skeleton (Suzuki and Takai, 1970; Hovers et al., 1995); Amud II: R maxilla (Hovers et al 1995); Amud III: R temporal, maxila fragment, frontal bone (?) (Hovers et al 1995); Amud IV: R temporal; Amud 5: humerus, tibia, radius; Amud 6: complete skeleton (intrusive) (Hovers et al 1995); Amud 7: partial skeleton- cranium (f), mandible (L complete, R medial half) (f); spine (C1-7, T1-11) (f/ff), ribs (ff); L clavicle (i), R clavicle (d), R scapula (f), R humerus (d), R radius (f), R ulna (f), R hand (d); pelvis (d), R tibia (d), foot (3 MT and 6 phalanges) (Rak et al. 1994; Been, Rak 2012); Amud 9: L foot, tibia and fibula (Hovers et al. 1995; Pearson et al. 2009); Amud 10: radius, Amud 12: distal radius, Amud 14: frontal process of L zygomatic, Amud 15: radius, Amud 16: femur, Amud 18: humerus (Hovers et al 1995).

10.4 Amud III: RdM_2; Amud 8: $RdM^{1/2}$; Amud 11: dC'; Amud 13: M; Amud 17: upper P or M.

10.5 –

11. Department of Anatomy and Anthropology, Faculty of Medicine, Tel Aviv University, P.O.B 39040, Ramat Aviv, Tel Aviv 69978, Israel.

12. –

13. –

14.1 No

14.2 –

14.3 –

14.4 –

14.5 –

14.6 –

14.7 –

14.8 –

14.9 –

14.10 –

15. No

16. No

17. Been, E., Rak, Y. (2012), Amud 7, a Neandertal infant from Amud Cave, Israel. *American Journal of Physical Anthropology*, 147(S54), 94. P; Hovers, E., et al. (1995), Hominid remains from Amud Cave in the context of the Levantine Middle Paleolithic. *Paléorient*, vol. 21, n°2, 47-61. P; Hovers E. 1998. The lithic assemblages of Amud Cave: Implication for understanding the end of the Mousterian in the Levant. In: Akazawa T, Aoki K, Bar-Yosef O, (Eds.). *Neandertals and Modern Humans in Western Asia*. Plenum Press, New York.143-163. A; Hovers, E., et al. (1995), Hominid remains from Amud Cave in the context of the Levantine Middle Paleolithic. *Paléorient*, 47-61. P; Hovers E., et al. (2017), Palaeolithic Occupations in Nahal Amud. In: Enzel Y, Bar-Yosef O, editors. In: Enzel, Y., Bar-Yosef, O. (Eds). *Quaternary of the Levant Environments, Climate Change, and Humans*. Cambridge University Press, Cambridge. 593-601. A, P; Ohnuma, K. (1992), The significance of layer B (square 8–19) of the Amud Cave (Israel) in the Levantine Levalloiso-Mousterian: A technological study. In: Akazawa, T., Aoki, K., Kimura, T., (Eds). *The Evolution and Dispersal of Modern Humans in Asia.* Hokusen-Sha Publishing, Tokyo. 83-106. A; Pearson, O. M., et al. (2020), A partial Neandertal foot from the Late Middle Paleolithic of Amud cave, Israel. *PaleoAnthropology*, 2020, 98-125. P; Rak, Y., et al. (1994), A Neandertal infant from Amud cave, Israel. *Journal of human evolution*, 26(4), 313-324. P; Rink, W. J., et al. (2001), Electron spin resonance (ESR) and thermal ionization mass spectrometric (TIMS) 230Th/234U dating of teeth in Middle Paleolithic layers at Amud Cave, Israel. *Geoarchaeology: An International Journal*, 16(6), 701-717. D; Suzuki, H., Takai, F. (1970), *The Amud Man and his Cave Site*. University of Tokyo Press, Tokyo. A, P; Valladas, H., et al. (1999), TL dates for the Neanderthal site of the Amud Cave, Israel. *Journal of Archaeological Science*, 26(3), 259-268. https://doi.org/10.1006/jasc.1998.0334 D

Code data collected by: Katerina Harvati, Carolin Röding, Paraskevi Elefanti

1. **APIDIMA CAVE A**, Apidima Cave Alpha

2. Laconia, Mani Peninsula, Peloponnese, Greece; 36°40'26" N, 22°21'50" E.

3. A. Andreikos (archaeology for Cave A 1976) T. Pitsios (for S2 30.04.1979).

4. Other (breccia).

5. No

6. The human remains were found in a breccia-filled fissure in the ceiling of Cave A. The breccia likely represents a secondary depositional context for the human remains.

7.1 Other (in prep).

7.2 Other (in prep).

7.3 No

7.4 No

7.5 No

7.6 No

7.7 No

8.1 Other (in prep).

8.2 –

9.1 Parietal fragment (bone/breccia), U-Th, 172 +/- 11 (ka BP), Bartsiokas et al., 2017; Bone fragment (sample 3720A, bone/breccia), U-Th, 160 +/- 8.3 (ka BP), Harvati et al., 2019; Bone fragment (sample 3720B, bone/breccia), U-Th, 160 +/- 7.8 (ka BP), Harvati et al., 2019.

9.2 No

9.3 No

10. 2 partial hominin crania but only 1 is a Neandertal: ΛΑΟ1/Σ2 (ΑΠΗΔΗΜΑ ΙΙ; LAO 1/S2; Apidima S2).

10.1 –

10.2 Adult (cranial sutures, cranial vault thickness).

10.3 Cranium (f): partial cranium preserving most of the facial skeleton, the parietal bones, and the left temporal bone. The lower face (mandible), occipital bone and cranial base are missing.

10.4 –

10.5 Unclear.

11. Anthropology Museum of the Medical School of the National and Kapodistrian University of Athens, Mikras Asias 75, Athens 115 27, Greece.

12. Anthropology Museum of the Medical School of the National and Kapodistrian University of Athens, Mikras Asias 75, Athens 115 27, Greece.

13. –

14.1 –

14.2 –

14.3 –

14.4 –

14.5 –

14.6 –

14.7 –

14.8 –

14.9 –

14.10 –

15. –

16. –

17. Pitsios, Th. K. (1984), Η ανθρωπολογική μελέτη των σκελετικών ευρημάτων αρχαιολογικών ανασκαφών. Ανθρωπολογικά 6, 41-51. P; Manolis, S. K. (1996), The Hellenic Late Pleistocene Fossils. *Anthropologie* 34, 89-97. P; Harvati, K., et al. (2011), Multivariate analysis and classification of the Apidima 2 cranium from Mani, Southern Greece. *Journal of Human Evolution* 60, 246-250. P; Harvati et al. (2019), Apidima Cave fossils provide earliest evidence of *Homo sapiens*. *Nature* 571, 500-504. P, D; Bräuer et al. (2019), Virtual reconstruction and comparative analyses of the Middle Pleistocene Apidima 2 cranium (Greece). Anatomical Record 303, 1374-1392. P; Lax, E. (1995), Quaternary faunal remains from the cave site of Apidima (Laconia, Greece). *Acta Anthropologica* 1, 127-156. Z; Tsoukala, E. (1999), Quaternary large mammals from the Apidima Caves (Laconia, S. Peloponnese, Greece). *Beitr. Palaeont*. 24, 207-229. Z; Bartsiokas, A., et al. (2017), U-series dating and classification of the Apidima 2 hominin from Mani Peninsula, Southern Greece. *Journal of Human Evolution* 109, 22-29. D; Chiotis, E. (2007), The lithic raw materials from the Paleolithic caves at Apidima in Mani and their geological provenance. *Proceedings of the International Scientific Symposium on Paleoanthropology of the Mani Peninsula*, Athens – Areopolis, Greece, 25.-28.09.1998. 99-100. R; Kourtessi-Philippakis, G. (2007), Une première approche des industries lithiques taillées d'Apidima (Mani), Greece: matières premières et technologie. *Proceedings of the International Scientific Symposium on Paleoanthropology of the Mani Peninsula*, Athens – Areopolis, Greece, 25.-28.09.1998. 97-98. R; Beier, J., et al. (2024). A preliminary investigation of the cranial breakage patterns of the late Middle Pleistocene crania from Apidima Cave, Greece. In: Harvati, K., Ioannidou, M. (Eds.), *Human Evolution at the CROSSROADS: Research in Greece and beyond.* Proceedings of the Closing Symposium, February 2022. Tübingen Paleoanthropology Book Series – Contributions in Paleoanthropology 3. Tübingen University Press, *in press.* P

Code data collected by: Giulia Marciani, Erica Piccirilli, Marco Peresani, Stefano Benazzi

1. **ARCHI**

2. Hill of San Francesco di Archi, 0.5 km south of Archi, Reggio Calabria, Italy; 38°08'20" N, 15°39'38" E.

3. A. Berdar, September 1970.

4. Complex of continental soils (Ascenzi e Segre, 1971a, b; Streslicka-Mydlarska, 1977).

5. No

6. Layer C-3 (Ascenzi e Segre, 1971a, b; Streslicka-Mydlarska, 1977).

7.1 No

7.2 No

7.3 No

7.4 No

7.5 No

7.6 No

7.7 No

8.1 Large mammals (Ascenzi e Segre, 1971a, b).

8.2 No

9.1 No

9.2 > 40 ka (Th-U on marine molluscs from level P, overlying layer C3) (Mallegni e Trinkaus, 1997).

9.3 Würm (Ascenzi e Segre, 1971a, b), probably OIS 4 or early OIS 3 based on fauna association (Palma di Censola 2001).

10. Archi 1.

10.1 Undetermined.

10.2 Child, about 3 years (Mallegni e Trinkaus, 1997), previously considered to be 5-6 yrs (Ascenzi e Segre, 1971a, b).

10.3 Mandibula (d/d), left and right rami largely missing (see remarks).

10.4 RdM_1, RdM_2, LdC_1, LdM_1, LdM_2; crowns from I_1 to M_1 are radiographically visible on both sides.

10.5 –

11. Istituto Italiano di Paleontologia Umana, presso il Convitto Nazionale Regina Margherita, in Piazza R. Bonghi 2, Anagni, Italy.

12. –

13. –

14.1 No

14.2 –

14.3 –

14.4 –

14.5 –

14.6 –

14.7 –

14.8 –

14.9 –

14.10 –

15. No

16. No

17. Arnaud, J. (2015), La mandibule d'Archi 1: Étude morphologique et morphométrique détaillée d'un néandertalien immature. *BMSAP*, 1(27), 42-55. P; Ascenzi, A., Segre, A. G. (1971°), A new Neandertal child mandible from an Upper Pleistocene site in Southern Italy. *Nature*, 233: 280-283. P; Ascenzi, A., Segre, A. G. (1971b), Il giacimento con mandibola neandertaliana di Archi (Reggio Calabria). *Rendic. Accad. Naz. Lincei*, 50: 763-771. P, A; Mallegni, F., Trinkaus, E. (1997), A reconsideration of the Archi 1 Neandertal mandible. *Journal of Human Evolution*, 33: 651-668. P; Smith, P. (1991), Specialized features of Neandertal teeth and the Latium Neandertals. *Quaternaria Nova*, 1: 663-671. P; Streslicka-Mydlarska, W. (1977), Zuchwa dzicka premustierskiego z Kalabrii. *Przeglad Antropologiczny*, 43: 153-158. P. Palma di Cesnola, A., (2001), *Il paleolitico inferiore e medio in Italia*, Millenni S. ed, Millenni. Museo Fiorentino di Preistoria Paolo Graziosi, Firenze. A

18. The dimensions and morphology of the Archi 1 mandible fall within the range of variability seen in Neandertal infants. However, its size exceeds that of other immature Neandertal mandibles at the same dental development stage, and the morphology of the symphysis profile is distinct. Although Archi 1 is younger, its morphology resembles that of older Neandertal children in the reference collection. This suggests that it may exemplify early development of Neandertal-specific traits during postnatal growth (Arnaud, 2015).

Code data collected by: Florent Rivals, Francesca Romagnoli

1. **ARRILLOR**

2. Spain; 43°14' N, 2°50' W.

3. J.M. de Barandiarán and D. Fernández Medrano 1959.

4. Cave deposits.

5. No

6. Level H-Amk.

7.1 Mousterian.

7.2 Levallois, Discoid.

7.3 Bone and antler tools (retouching tools).

7.4 No

7.5 No

7.6 Yes

7.7 Fireplaces.

8.1 Large mammals, small mammals.

8.2 Herbaceous, shrubs/trees (based on pollen analysis).

9.1 No

9.2 45400 to 45700 BP (C14 on bone and charcoal; Hoyos et al. 1999).

9.3 –

10. AR-1740: dM^2.

10.1 –

10.2 AR-1740: 9-13 years (based on tooth wear).

10.3 –

10.4 Ar-1740: dM^2 (complete crown).

10.5 –

11. National Museum of Archaeology, C/ Serrano 13, Madrid, Spain.

12. –

13. –

14.1 –

14.2 –

14.3 –

14.4 –

14.5 –

14.6 –

14.7 –

14.8 –

14.9 –

14.10 –

15. No

16. No

17. Garralda, M.D. (2005), Los Neandertales en la Peninsula Iberica. *Munibe* 57, 289-314. P; Hoyos, M., et al. (1999), Cronoestratigrafía y paleoclimatología de los depósitos prehistóricos de la cueva de Arrillor (Araba, País Vasco). *Munibe* 51, 137-151. A; Iriarte-Chiapusso, M.J., et al. (2019), Arrillor cave (Basque Country, northern Iberian Penisula). Chronological, palaeo-environmental and cultural notes on a long Mouste-

rian sequence. *Quaternary International* 508, 107-115. A, E; Ugarte, P., Castaños, M., (2005), Revisión actualizada de las faunas de macromamíferos del Würm antiguo en la Región Cantábrica. *Neandertales cantábricos, estado de la cuestión: actas de la reunión científica: celebrada en el Museo de Altamira los días 20-22 de octubre de 2004*, Ministerio de Cultura, Madrid. Z, E

Code data collected by: Jean-Luc Voisin

1. **ARTENAC**

2. *Lieu dit* “Les Boissières” close to the village of Saint Mary, 20 km North East from Angoulême, Charente, France; 45°50’15” N, 0°19’49” E.

3. Abbé A. Boreau-Lajanadie 1921 (discovery); G. Bailloud and C. Burnez 1950s (excavations); J.-F. Tournepiche 1972 (discovery of the cave); excavated by B. Vandermeersch, J.-F. Tournepiche and A. Debénath.

4. Cave deposits.

5. No

6. Layer 7 (Artenac 1) and layer 6b (Artenac 2).

7.1 Mousterian (type la Ferrassie).

7.2 Levallois and flake.

7.3 No

7.4 No

7.5 No

7.6 No

7.7 None

8.1 Large and small mammals.

8.2 No

9.1 No

9.2 U-Th (on stalagmitic floor), TL, ESR (mammal teeth) (Delagnes et al. 1999). The age of the human remains is 124 000 – 119 000 years old, which corresponds to the MIS 5

9.3 Layers 6 and 7- MIS 5 (biostratigraphy and mammal fauna).

10. Artenac 1 and Artenac 2, MNI: 2.

10.1 –

10.2 Artenac 1: mature adult (significant wear of the teeth); Artenac 2: young adult (non-synostosed coronal suture).

10.3 Artenac 1: R maxillary bone (f) with P^3, P^4, M^2 and M^3; Artenac 2: Frontal bone (f)

10.4 No free teeth.

10.5 Artenac 1: There are well-marked abscess pits over the maxillary roots of the I_2, C and M^3; I_1 and C were lost ante mortem; it seems likely that there were fenestrations exposing the roots of P_3 and M_3.

11. Unknown.

12. –

13. –

14.1 No

14.2 –

14.3 –

14.4 –

14.5 –

14.6 –

14.7 –

14.8 –

14.9 –

14.10 –

15. –
16. –
17. Boreau-Lajanadie A. (1921), Gisement préhistorique aux Boissières. *Bulletins et Mémoires de la Société Archéologique et Historique de Charente*, Série 8, Tome 12, LXIX-LXXI. A; Delagnes, A., et al. (1999), Le gisement Pléistocène moyen et supérieur d'Artenac (Saint-Mary, Charente): premier bilan interdisciplinaire. *Bulletin de la Société Préhistorique Française*, 96 (4), 469-496. https://doi.org/10.3406/bspf.1999.11013. A, P, R, D, E; Mann, A., et al. (2007), Human fossil remains from the Mousterian levels of Artenac (Charente). *Comptes Rendus Palevol* 6 (8), 581-589. https://doi.org/10.1016/j.crpv.2007.10.002. P, R; Meignen, L., et al. (1977), Le gisement Moustérien d'Artenac à Saint-Mary (Charente). Étude préliminaire. *Gallia Préhistoire*, 20 (1) 281-291. https://doi.org/10.3406/galip.1977.1562. A, Str; Tournepiche J.-F. (1972), Découverte en 1972 de restes préhistoriques à proximité de l'emplacement de l'ancienne grotte sépulcrale d'Artenac. *Bulletins et Mémoires de la Société Archéologique et Historique de Charente*, 1972, 60. A

Code data collected by: Florent Rivals, Francesca Romagnoli

1. **AXLOR**
2. Spain; 43°9' N, 2°46' W.
3. J.M. de Barandiarán and D. Fernández Medrano 1932.
4. Cave deposits.
5. No
6. Levels IV, V, VII.
7.1 Mousterian.
7.2 Levallois.
7.3 Bone tools (retouchers).
7.4 No
7.5 No
7.6 N/A
7.7 Fireplaces.
8.1 Large mammals, small mammals.
8.2 Herbaceous, shrubs/trees.
9.1 No
9.2 Level IV: beyond the radiocarbon limit.
9.3 N/A
10. Ax.11B.415.400; Ax.9E.283.103; Ax.5B.299.31.64.17.
10.1 –
10.2 Ax.11B.415.400: Young adult or adult (based on bone thickness); Ax.5B.299.31.64.17: 6 to 8 years old (based on wear); Ax.9E.283.103: 10 to 11 years old (based on wear)
10.3 Ax.11B.415.400: fragment of left parietal bone with sagital suture.
10.4 Ax.9E.283.103: RdM^2 (complete crown, no root); Ax.5B.299.31.64.17: LdI^1 (incomplete root).
10.5 –
11. Arkeologi Museoa, Mallona Galtzada, 2, Ibaiondo, 48006 Bilbo, Bizkaia, Spain.
12. –
13. Micro CT scans: https://figshare.com/articles/dataset/Axlor_data/10308272.
14.1 –
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No
17. Baldeón, A., (1999), El abrigo de Axlor (Bizkaia, Pais Vasco). Las industrias liticas de sus niveles Musterienses. *Munibe* 51, 9-121. A; Gómez-Olivencia, A. et al. (2020), The human remains from Axlor (Dima, Biscay, northern Iberian Peninsula). *American Jour-*

nal of Physical Anthropology 172, 475-491. P; González Urquijo, J., et al. (2004), Excavación arqueológica en el yacimiento de Axlor (Dima, Bizkaia). *Memoria* 2004, 1-20. A; Ugarte, P.M.C. (2005), Revisión actualizada de las faunas de macromamíferos del Würm antiguo en la Región Cantábrica. *Neandertales cantábricos, estado de la cuestión: actas de la reunión científica: celebrada en el Museo de Altamira los días 20-22 de octubre de 2004*, Ministerio de Cultura, Madrid. E, Z

Code data collected by: Florent Rivals, Francesca Romagnoli

1. **BANYOLES**; Bañolas
2. Spain; 42°7’ N, 2°45’ E.
3. P. Alsius 1887.
4. Travertine deposits.
5. No
6. N/A
7.1 No
7.2 No
7.3 No
7.4 No
7.5 No
7.6 No
7.7 No
8.1 N/A
8.2 N/A
9.1 U series/ ESR, 45 ± 4 ka to 66.0 ± 7.0 ka (Julià, Bischoff 1991).
9.2 No
9.3 N/A
10. Mandible (no specimen or catalogue number).
10.1 –
10.2 Adult (tooth wear).
10.3 Mandible with all teeth.
10.4 L+R I_1, I_2, C_1, P_1, P_2, M_1, M_2, M_3.
10.5 High degree of wear.
11. Private owner: Alsius familly, Banyoles, Spain.
12. –
13. CT scans: https://www.morphosource.org/concern/media/000492512.
14.1 –
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No
17. Brugués, R.J., et al. (1987), La mandíbula de Banyoles. Antecedents i context de la seva troballa. *Cypsela* 6, 43-52. A; Galobart, À., et al. (1996), Las Faunas cuaternarias de mamíferos de la Cuenca de Banyoles-Besalú (Girona*). Revista Española de Paleontología*, 248-255. E; Julià, R., Bischoff, J.L. (1991), Radiometric dating of quaternary deposits and the hominid mandible of lake Banyolas, Spain. *Journal of Archaeological*

Science 18, 707-722. A, D; Keeling, B.A., et al. (2023), Reassessment of the human mandible from Banyoles (Girona, Spain). *Journal of Human Evolution* 174, 103291. P; Lalueza, C., et al. (1993), Microscopic study of the Banyoles mandible (Girona, Spain): diet, cultural activity and toothpick use. *Journal of Human Evolution* 24, 281-300. P

Code data collected by: Jean-Luc Voisin, Anna Degioanni

1. **BAU DE L'AUBESIER**

2. Large rock shelter in the Gorges de la Nesque, Monieux, 24 km East of Carpentras, Vaucluse, France; 44°05' N, 5°21' E.

3. M. Bonifay and K. Moulin (first excavations, 1901), Gauthier L. (1950 – 1957 not consecutively), Mary B. (1957 – 1964) and Lebel S. (1987 – 2006 not consecutively).

4. Cave deposits.

5. No

6. Aubesier 1: layer B according to Moulin (1903), see also de Lumley (1969); Aubésier 2: layer unknown; Aubesier 4: layer K-1; Aubesier 5: layer IVP; Aubesier 6: layer IVP; Aubesier 7: layer IV; Aubesier 8: layer IV; Aubesier 9: layer IVP; Aubesier 10: layer I3; Aubesier 11: layer I2; Aubesier 12: layer IV.

7.1 Typical Mousterian.

7.2 Levallois.

7.3 Bones.

7.4 No

7.5 Yes (not modified)

7.6 No

7.7 Fireplaces (mostly layers H1 and level IV), charcoal; burning flints (mostly layers H1 and level IV).

8.1 Large mammals.

8.2 No

9.1 No

9.2 Thermoluminscence and ESR, 169±17 ka (minimum age), 191±15 ka (maximum age) for layer H-1 just above the three layers K-1, I3 and I2 containing Aubesier 4; Aubesier 10 and Aubesier 11.

9.3 Biostratigraphy (Moulin, 1903; de Lumley, 1969; Trinkaus et al., 2000, Lebel & Trinkaus, 2002; Fernandez, 2006)- MIS 7-6 based on mammal taxa (*Equus mosbachensis, Equus cf. taubachensis, Cervus elaphus*).

10. Aubesier 1: RdM^2 (lost); Aubesier 2: LP_2; Aubesier 4: LI^2; Aubesier 5: RdM^1; Aubesier 6: LdC^1; Aubesier 7: LdM^2; Aubesier 8: RdI_1; Aubesier 9: RI^2; Aubesier 10: $M^{1/2}$; Aubesier 11: mandible consists of the symphyseal region, right lateral corpus, and much of the right ramus; Aubesier 12: $RM^{1/2}$. MNI: 4 – 5.

10.1 –

10.2 Aubesier 1: 10-11 years (root resorption); Aubesier 2: adult (tooth morphology); Aubesier 4: adult (tooth morphology); Aubesier 9: adult (tooth morphology); Aubesier 10: adult (tooth morphology); Aubesier 12: adolescencent, (tooth wear); Other teeth: adult (tooth morphology).

10.3 Aubesier 11: mandible (f)

10.4 Aubesier 1: RdM^2 (lost) no cast known; Aubesier 2: LP_4 (i); Aubesier 4: LI^2 (i); Aubesier 5: RdM^1 (f) – naturally resorbed roots; Aubesier 6: LdC^1 (f) – root missing; Aubesier 7: LdM^2 (i) – naturally resorbed roots; Aubesier 8: RdI_1 (f) – root missing; Aubesier 9: RI^2 (i); Aubesier 10: $M^{1/2}$ (i); Aubesier 12: $RM^{1/2}$ (f).

10.5 Aubesier 5: mid-lingual pit identified as a modest carious lesion; Aubesier 10: mesial interproximal "toothpick" groove; Aubesier 11: high degree of alteration of the alve-

olar bone, attributed to extensive periodontal-endodontal lesions; Aubesier 12: large carie.

11. Laboratoire Départemental de Préhistoire du Lazaret: grotte du Lazaret, 33 boulevard Franck Pilatte, Nice, France.

12. –

13. –

14.1 –

14.2 –

14.3 –

14.4 –

14.5 –

14.6 –

14.7 –

14.8 –

14.9 –

14.10 –

15. No

16. No

17. de Lumley H. (1962), Paléolithique ancien et moyen en Vaucluse. *Bulletin de la Société d'étude des sciences naturelles de Vaucluse*, 62, 29-79. A; de Lumley H. (1969), Le Paléolithique inférieur et moyen du Midi méditerranéen dans son cadre géologique. Tome I. Ligurie – Provence. *Gallia préhistoire*, Supp 5-1, 1-463. A; de Lumley M.A. (1973), Anténéandertaliens et néandertaliens du bassin méditerranéen occidental européen. *Etude Quaternaire*, 2, 1-603. P; Fernandez P. (2006), Étude paléontologique des ongulés du gisement moustérien du Bau de l'Aubesier (Vaucluse, France): morphométrie et contexte biochronologique. Documents des Laboratoires de Géologie, Lyon, n°161, 3-231. S, Z; Lautridou J.-P., et al. (1982), The Quaternary of Normandy. *Bulletin du Centre de Géomorphologie, CNRS, Caen*, 88. D ; Lebel S., Trinkaus E. (2001), New discoveries of Middle Paleolithic human remains from the "Bau de l'Aubésier (Vaucluse, France)". *Bulletins et Mémoires de la Société d'Anthropologie de Paris*, 13 (1-2), 15-21. https://doi.org/10.4000/bmsap.5623. P, D; Lebel S., Trinkaus E. (2002a), Middle Pleistocene human remains from the Bau de l'Aubesier, *Journal of Human Evolution*, 43 (5), 659-685. https://doi.org/10.1006/jhev.2002.0598 P; Lebel S., Trinkaus E. (2002b) A Carious Neandertal Molar from the Bau de l'Aubesier, Vaucluse, France. *Journal of Archaeological Science*, 29 (5), 555-557. https://doi.org/10.1006/jasc.2001.0689. P; Lebel S., et al. (2001), Comparative morphology and paleobiology of Middle Pleistocene human remains from the Bau de l'Aubesier, Vaucluse, France. *Proceedings of the National Academy of Sciences (USA)*, 98 (20), 11097-11102. https://doi.org/10.1073/pnas.181353998. P; Moulin F. (1903) L'abri du Bau de l'Aubesier. *Bulletins – Académie du Var*, 71, 369-450. P, Z, A ; Moulin F. (1904) L'abri moustérien du Bau de l'Aubesier (Vaucluse). *Bulletin de la Société Préhistorique de France*, 1 (1), 14-20. https://doi.org/10.3406/bspf.1904.11230. P, Z, A; Trinkaus E., et al. (2000). Middle Paleolithic and recent human dental remains from the Beau de l'Aubesier, Monieux (Vaucluse). *Bulletins et Mémoires de la Société d'Anthropologie de Paris*, 12 (3-4), 207-226. P

Code data collected by: Jean-Luc Voisin, Anna Degioanni

1. **BAUME NÉRON**

2. Near the Village of Soyon, Ardèche, France, 10 km South of Valence; 44°52'58" N, 4°50›50" E.

3. L. N.Lepic and J. de Lubac around 1870 (discovery), since then many excavations more or less legal, but without any publications, first serious drill made in 1950 and new work has been made in 1990 and 1991 by A. Defleur.

4. Cave deposits.

5. No

6. Just below the recent layer is a first Mousterian layer (layer 1).

7.1 Mousterian.

7.2 Levallois and Mousterian Quina type.

7.3 No

7.4 No

7.5 No

7.6 No

7.7 No, but a lot of ashes in many layers.

8.1 Large and small mammals (homogeneous over the entire filling), continental molluscs.

8.2 No

9.1 No

9.2 C14, on charcoal from layer 3- 43 000 +/- 1100 years BP (Defleur et al. 1994).

9.3 No

10. BN 1 and BN 2.

10.1 –

10.2 BN1: juvenile (deciduous tooth).

10.3 –

10.4 BN 1: RdC_1; BN 2: LM^1 (f).

10.5 –

11. Site archéologique: Grottes et Musée, 28 Rue de l'Église, 07130 Soyons, France.

12. –

13. –

14.1 No

14.2 –

14.3 –

14.4 –

14.5 –

14.6 –

14.7 –

14.8 –

14.9 –

14.10 –

15. No

16. No

17. Combier J. (1958), Pointes levalloisiennes retouchées sur face plane (pointe de type Soyons). *Bulletin de la Société Préhistorique Française* 52 (7), 432-434. https://doi.

org/10.3406/bspf.1955.3232. A; Defleur A. et al. (1992), Étude de deux dents humaines provenant des niveaux moustériens de la Baume Néron (Soyons, Ardèche). *Bulletins et Mémoires de la Société d'Anthropologie de Paris* 4 (1-2), 127-134. https://doi.org/10.3406/bmsap.1992.2308. P, R; Defleur A. et al. (1994), Industries, biostratigraphie, restes humains et datation du gisement moustérien de la Baume Néron (Soyons, Ardèche). *Comptes Rendus de l'Académie des Sciences Série 2, Earth & Planetary Sciences* 318 (10), 1409-1414. D, Str, Z, A; Lepic L. N., de Lubac J. (1872), Stations préhistoriques de la vallée du Rhône en Vivarais. *Matériaux*, 3, 27. A, P; Veyrier M. et al. (1951), Grotte de Néron à Soyons (Ardèche). Les fouilles de 1950, leurs enseignements. *Bulletin de la Société Préhistorique Française* 48 (1-2), 70-78. https://doi.org/10.3406/bspf.1951.2825. A; Veyrier M., Combier J. (1951), L'industrie moustérienne de la grotte de Néron à Soyons (Ardèche). *L'Anthropologie (Paris)* 56 (3-4), 383-385. A

Code data collected by: Jean-Luc Voisin

1. **BAUME DES PEYRARDS**, Grotte des Peyrards
2. Near the village of Buoux, 8 km south of Apt (Vaucluse), France; 43°50'02" N, 5°24'08" E.
3. E. Requien 1808.
4. Cave deposits and occupation deposits.
5. No
6. Layers 2 to 3: Payrards I and II; out of context (reworked sediment): Payrards III and IV.
7.1 Mousterian and Charentian Mousterian of the Ferrassie type for layers with human remains.
7.2 Acheulean, levallois, etc.
7.3 No
7.4 No
7.5 No
7.6 No
7.7 Fire places in layers 25 to 23, 18 to 13 and 9 to 4.
8.1 Large and small mammals.
8.2 No
9.1 No
9.2 No
9.3 Middle Palaeolithic based on stratigraphy and lithic techno-typology.
10. Peyrards I, Peyrards II, Peyrards III, Peyards IV.
10.1 –
10.2 Peyards IV: 10 –11 years (stage of root resorption).
10.3 –
10.4 Peyrards I: RM^2 (i/d); Peyrards II: RM_1 (f- roots broken); Peyrards III: RM_1 (f- roots broken); Peyards IV: RdC' (i).
10.5 –
11. Musée Calvet, 65 rue Joseph-Vernet, 84000 Avignon, France.
12. –
13. –
14.1 No
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No
17. de Lumley H. (1957), Le Moustérien de la Baume des Peyrards (Vaucluse): Note préliminaire. *Bulletin de la Société d'Etude des Sciences Naturelles de Vaucluse* 1-23. A, Z, E, Str; de Lumley M.A. (1973), Anténéandertaliens et néandertaliens du bassin

méditerranéen occidental européen. *Etude Quaternaire* 2, 1-603. P; Porraz G. (2002), Les pièces amincies de la Baume des Peyrards (Massif du Luberon, Vaucluse): analyse des procédés de réalisation. *Préhistoires Méditerranéennes* 10-11, 27-38. https://doi.org/10.4000/pm.242. A

18. "Baume" means cave in the dialect of the region.

Code data collected by: Jean-Luc Voisin, Anna Degioanni

1. **BIACHE-SAINT-VAAST**

2. Open air site, near the village of Biache-Saint-Vaast, Pas-de-Calais, France, about 15 km East from Arras; 50°18' N, 2°56' E.

3. The site was discovered on 24th April 1976 following the work for the extension of a steel factory. Rescue excavations organised by A. Tuffreau between 1976 and 1982.

4. Alluvial/river deposits.

5. No

6. Unit ii (fluvial terrace), lower terrace, layer 2b.

7.1 Mousterian.

7.2 Mousterian, La Ferrassie type.

7.3 No

7.4 No

7.5 Shell, no modifications.

7.6 No

7.7 No

8.1 Large and small mammals, malacofauna.

8.2 No

9.1 Gamma spectrometry on BSV 2: 263 000 +53 000/-37 000 years (Yokoyama 1989).

9.2 TL: 175 000 ± 13 000 years, on burnt lithics, level IIa; ESR: animal teeth from level IIA: 272 000 years old (Bahain et al., 1993); Combined ESR/U-series: animal bones and teeth: 236 000 ± 18 000 (Huxtable, Aitken 1988; Bahain et al. 2015).

9.3 Biostratigraphy based on large and small mammals, MIS 7.

10. BSV 1 (Biache-Saint-Vaast 1); BSV 2 (Biache-Saint-Vaast 2).

10.1 BSV 1: Could be female, due to low bone robustness; BSV 2: Could be male, due to bone robustness.

10.2 BSV 1: 15-20 years old (root closure of the M2 and M3); BSV 2: adult (skull bones anatomy).

10.3 BSV 1: L and R parietal bone (f), L and R temporal bone L (ff), occipital (d), L maxillary bone (ff) with 3 molars, R maxillary bone (ff) with 3 molars, two ossicles of the inner ear (L incus (d) and L malleus (d)); BSV 2: frontal bone (f), L parietal bone (ff), L temporal bone (ff), occipital bone (ff), sphenoide bone (f).

10.4 BSV 1: LI^2 (f), RP^3, LP^3 (f), RP^4, LP^4.

10.5 –

11. Biache-Saint-Vaste 1: Musée d'Archéologie nationale et domaine national de Saint-Germain-en-Laye, Place Charles de Gaulle, 78100 Saint-Germain-en-Laye, France.

12. –

13. The Muséum National d'Histoire Naturelle, Paris at the AST-RX plateform https://3dtheque.mnhn.fr/platform/astrx;jsessionid=B29E4A50165A2EC0320FF2081D963236?lang=fr_FR.

14.1 No

14.2 –

14.3 –

14.4 –

14.5 –

14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No
17. Auguste P. (1992), Etude archéozoologique des grands mammifères du site Pléistocène moyen de Biache-Saint-Vaast (Pas-de-Calais, France) : apports biostratigraphiques et palethnographiques. *L'Anthropologie (Paris)* 96, 49-70. Z; Auguste P. (1995), Chasse et charognage au Paléolithique moyen: l'apport du gisement de Biache-Saint-Vaast (Pas-de-Calais). *Bulletin de la Société Préhistorique Française* 92 (2), 155-167. Z, E; Bahain J.-.J. et al. (2015), ESR/U-series dating of faunal remains from the paleoanthropological site of Biache-Saint-Vaast (Pas-de-Calais, France). *Quaternary Geochronology* 30, Part B, 541-546. https://doi.org/10.1016/j.quageo.2015.02.020. D; Chaline J. (1978), Les Rongeurs de Biache-Saint-Vaast (Pas-de-Calais) et leurs implications stratigraphiques et climatiques. *Bulletin de l'Association Française pour l'Etude du Quaternaire* 15 (1-3), 44-46. https://doi.org/10.3406/quate.1978.2162. Z; Guipert G. et al. (2011), A late Middle Pleistocene hominid: Biache-Saint-Vaast 2, North France. *Comptes Rendus Palevol* 10 (1), 21-33. https://doi.org/10.1016/j.crpv.2010.10.006. P, R; Fenart R. et al. (1983), Le crâne de l'homme fossile de Biache-Saint-Vaast, en orientation vestibulaire. *Bulletins et Mémoires de la Société d'Anthropologie de Paris*, Série 13, Tome 10 (1), 111-117. https://doi.org/10.3406/bmsap.1983.3887. P; Huxtable, J., Aitken, M.J. (1988), Datation par thermoluminescence. In: Tuffreau A., Sommé J. (Eds.), *Le gisement paléolithique moyen de Biache-St-Vaast (Pas-de-Calais)*. *Mémoires la Société Préhistorique Française*, 21, 107-108. D; Martín-Francés L. et al. (2022), Middle Pleistocene hominin teeth from Biache-Saint-Vaast, France. *Archaeological and Anthropological Sciences* 14, 215 (28 p.). https://doi.org/10.1007/s12520-022-01680-6. P, R; Poplin F. (1978), Aperçu sur la grande faune pléistocène du gisement paléolithique de Biache-Saint-Vaast (Pas-de-Calais). *Bulletin de l'Association Française pour l'Etude du Quaternaire* 15 (1-3), 60-65. https://doi.org/10.3406/quate.1978.2165. Z; Rougier H. (2003), Étude descriptive et comparative de Biache-Saint-Vaast 1 (Biache-Saint-Vaast, Pas-de-Calais, France). Université de Bordeaux I, 418. P, R; Tuffreau A., Somme J. (Eds.) (1988), *Le Gisement Paléolithique moyen de Biache-Saint-Vaast (Pas de Calais) – Volume 1.* Mémoires de la Société Préhistorique Française, 21. A, P; Tuffreau A. et al. (1982), Stratigraphie et environnement de la séquence archéologique de Biache-Saint-Vaast (Pas-de-Calais). *Bulletin de l'Association Française pour l'Etude du Quaternaire* 19 (2-3), 57-61. https://doi.org/10.3406/quate.1982.1420. Str, E; Vandermeersch B. (1982), L'Homme de Biache-Saint-Vaast. Comparaison avec l'homme de Tautavel. In: *1st Congrès International de Paléontologie Humaine (Nice, 1982)*, CNRS, Paris, 894-900. P; Yokoyama Y. (1989), Direct gamma-ray spectrometric dating of Anteneandertalian and Neandertalian human remains. In *Hominidae. Proceedings of the Second International Congress of Human Palaeontology*, G. Giacobini (Ed.), Jaca Book, Milan, 387-390. D

Code data collected by: Giulia Marciani, Erica Piccirilli, Marco Peresani, Stefano Benazzi

1. **BISCEGLIE**, Grotta Santa Croce
2. On the right flank of the Lama di Santa Croce, 7 km South of Bisceglie, Bari, Italy; 41°11'N, 16°31' E.
3. L. Cardini and P. Cassoli, June 1955.
4. Cave deposits (Mallegni et al., 1987).
5. No
6. In the inner part of the cave, layer 4 (Mallegni et al., 1987).
7.1 Charentian Mousterian of Quina type (Mallegni et al., 1987).
7.2 Quina (Mallegni et al., 1987).
7.3 No
7.4 No
7.5 No
7.6 No
7.7 No
8.1 Large mammals (Cardini, 1955; Mallegni et al., 1987).
8.2 No
9.1 No
9.2 No
9.3 Relative dating: Final Würm I / early Würm II based on stratigraphic and faunal evidence (Mallegni et al., 1987).
10. Bisceglie 1 (L).
10.1 –
10.2 Adult (general morphology and dimensions).
10.3 R femur diaphyseal shaft (including the lesser trochanter and a portion of the neck).
10.4 –
10.5 –
11. Istituto Italiano di Paleontologia Umana, presso il Convitto Nazionale Regina Margherita, in Piazza R. Bonghi 2; Anagni, Italy.
12. –
13. –
14.1 –
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No

17. Cardini, L. (1955), Giacimento musteriano della Grotta Santa Croce in Bisceglie e scoperta di un femore umano neandertaliano. *Quaternaria*, II: 312. P, A; Mallegni, F. (1992), Il più antico popolamento umano. In A. Guidi & M. Piperno (eds.), *Roma-Bari: Laterza*, 103-138. P, A; Mallegni, F., et al. (1987), Human remains of Homo sapiens neanderthalensis from the Pleistocene deposit of Santa Croce Cave, Bisceglie (Apulia), Italy. *American Journal of Physical Anthropology* 72: 421-429. P

Code data collected by: Florent Rivals, Francesca Romagnoli

1. **BOLOMOR CAVE**; Cova del Bolomor
2. Spain; 39°4’ N, 0°26’ W.
3. J. Vilanova y Piera 1868.
4. Cave deposits.
5. No
6. Layers III, IV, VI and XIII.
7.1 Mousterian.
7.2 Expedient/flake; discoid.
7.3 No
7.4 No
7.5 No
7.6 No
7.7 Hearths.
8.1 Large mammals, small mammals, birds, reptiles, amphibians, fish, molluscs.
8.2 Herbaceous, shrubs/trees.
9.1 No
9.2 Layer XIII = 228 ± 53 ka (aminoacids, Fernández Peris et al. 2012).
9.3 Layer III = MIS 5e, Layer IV = MIS 5e, Layer VI = MIS 5e (based on dating of other layers and sediments).
10. HCB01; HCB02; HCB05; HCB07.
10.1 –
10.2 HCB02: 3.5 to 5 years (based on stages of calcification); HCB05: 5 to 6 years (based on stages of calcification); HCB07: adult (based on sutures).
10.3 HCB07: L parietal fragment nearly complete but embedded in breccia, only the endocranial surface is visible); HCB01: proximal diaphyseal fragment of a L fibula.
10.4 HCB05: LC^1 (root embedded in breccia); HCB02: LM_1 (complete).
10.5 –
11. Museu de Prehistòria de València, C/ de la Corona, 36, Ciutat Vella, 46003 Valencia, Spain.
12. –
13. –
14.1 –
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No

17. Arsuaga, J.L., et al. (2012), Fossil human remains from Bolomor Cave (Valencia, Spain*). Journal of Human Evolution* 62, 629-639. P., A; Blasco, R., Fernández Peris, J. (2012), A uniquely broad spectrum diet during the Middle Pleistocene at Bolomor Cave (Valencia, Spain). *Quaternary International* 252, 16-31. A; Fernández Peris, J. (2007), La Cova del Bolomor (Tavernes de la Valldigna, Valencia). Las industrias líticas del pleistoceno medio en el ámbito del Mediterráneo Peninsular. Museu de Prehistòria de València, Valencia. A; Fernández Peris, J. et al. (2012), La Cova del Bolomor (Tavernes de la Valldigna, Valencia, España). In: Sala-Ramos R. (ed.), *Los cazadores recolectores del Pleistoceno y Holoceno en Iberia y el Estrecho de Gibraltar*. Universidad de Burgos, 323-331. A; Vidal-Matutano, P., et al. (2019), The Anthropogenic Use of Firewood During the European Middle Pleistocene: Charcoal Evidence from Levels XIII and XI of Bolomor Cave, Eastern Iberia (230-160 ka). *Environmental Archaeology* 24, 269-284. A

Code data collected by: Adrian Dobos

1. **BORDU MARE**, Ohaba Ponor
2. Romania, Hunedoara County, Commune of Pui, Village Ohaba Ponor (Ohaba-Ponor), 45°30’ N, 23°09’ E.
3. M. Roska 1923.
4. Cave deposits.
5. No
6. Mousterian III.
7.1 Mousterian.
7.2 Typical Musterian (predominantly) in quartzite.
7.3 No
7.4 No
7.5 No
7.6 No
7.7 Hearths.
8.1 Large mammals, small mammals.
8.2 No
9.1 No
9.2 Older than 39355–37739 calBP, age obtained for the superimposing layer, Mousterian IV (Chu et al. 2024).
9.3 Middle Palaeolithic based on lithic techno-typology.
10. Nr. inv. 1 (yellow color, the specimen was glued on a surface- it was covered by preservative and cut in the middle of diaphysis).
10.1 –
10.2 Adult.
10.3 Nr. Inv. 1: R 5th proximal hand phalanx (in te first publication the specimen was assigned as first phalanx from the 2nd finger from R foot (Gaál 1927 – 1928, 23-31)).
10.4 –
10.5 –
11. Muzeul Civilizatiei Dacice si Romane, Strada 1 Decembrie 39, Deva 330005, Romania.
12. –
13. No
14.1 No
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No

17. Chu, W., et al. (2024). Interactions in bones but not stone: Anomalous cultural transmission gaps in Romania's Middle to Upper Paleolithic Transition. *Quaternary Science Reviews* 329: 108546. D; Roska, M. (1925), Rapport préliminaire sur les fouilles archéologiques de l'anneé 1925. *Dacia* 2(1925): 400-416. A; Păunescu, A. (2001), *Paleoliticul şi mezoliticul din spaţiul transilvan*. Bucureşti, AGIR, 264-298 A;Stefan v. Gaál*, Der erste mitteldiluviale Menschenknochen aus Siebenbürgen. Die palaeontologischen und archaeologischen Ergebnisse der in Ohaba Ponor ausgeführten Höhlenforschingen*, Publicațiile Muzeului Jud. Hunedoara, anul III-IV (XXV-XXVI), 1927 – 1928, 61-102. P

Code data collected by: Giulia Marciani, Erica Piccirilli, Marco Peresani, Stefano Benazzi

1. **BREUIL**, Grotta Breuil
2. Along the coastal profile of Monte Circeo (Latina, Italy), at the opposite (western) side of Guattari Cave; 41°14' N, 13°05' E.
3. A. Bietti, on September, 19th, 1986 (Breuil 1), August 10th, 1988 (Breuil 2) and August 24th, 1989 (Breuil 3).
4. Cave deposit.
5. No
6. Breuil 1 and 2 were found in the surface levels of the slope that secondarily overlapped the lower in situ strata. Breuil 3 was found in layer XI of the upper stratigraphical sequence (Bietti et al., 1991; Manzi e Passarello, 1995).

7.1 Mousterian (Taschini, 1970; various papers in Bietti e Manzi, 1991).

7.2 Pontinian, low Levallois presence of quina, exploitation of local raw material characterized by small rounded pebbles with presence of elongated flakes in the uppermost levels of the stratigraphical sequence (Taschini, 1970; various papers in Bietti e Manzi, 1991).

7.3 No

7.4 No

7.5 No

7.6 No

7.7 No

8.1 Large mammals (Stiner, 1991).

8.2 No

9.1 –

9.2 The uppermost levels of the sequence were preliminary dated by ESR to 36.6 ± 2.7 ka (Schwarcz et al., 1991).

9.3 Late MIS 3, postdating the beginning of the Würm II stadial based on stratigraphic and faunal evidence (Bietti et al., 1991; Manzi e Passarello, 1995).

10. Breuil 1 (*); Breuil 2; Breuil 3.

10.1 –

10.2 Breuil 1: adult (dimensions, especially thickness); Breuil 2: adult (dental maturation and wear); Breuil 3: juvenile, 13-14 years (M3).

10.3 Breuil 1: postero-inferior portion of left parietal bone (f).

10.4 Breuil 2: $LM_{2;}$ Breuil 3: LM_3 (unerupted).

10.5 –

11. Dipartimento di Biologia Animale e dell'Uomo, Università di Roma "La Sapienza", P.le A. Moro 5, 00185 Roma,Italy.

12. –

13. –

14.1 –

14.2 –

14.3 –

14.4 –

14.5 –

14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No
17. Bietti, A., et al. (1991), Grotta Breuil: a general introduction and stratigraphy. *Quaternaria Nova,* 1: 305-324. A; Bietti, A., Manzi, G. (eds) (1991), The Fossil Man of Monte Circeo. Fifty Years of Studies on the Neandertals in Latium. *Quaternaria Nova*, 1 (Proceedings of the homonymous symposium; Sabaudia, October 1989). A, P; Manzi, G., Passarello, P. (1991), The human remains from Grotta Breuil (M. Circeo, Italy). *Quaternaria Nova,* 1: 429-440. P; Manzi, G., Passarello, P. (1995), At the archaic/modern boundary of the genus Homo: the Neandertals from Grotta Breuil. *Current Anthropology*, 36: 355-366. P; Schwarcz, H.P., et al. (1991), Absolute dating of sites in coastal Lazio. *Quaternaria Nova*, 1: 51-67. A, D; Stiner, M.C. (1991), Ungulate exploitation in the terminal Mousterian of Italy: the case of Grotta Breuil. *Quaternaria Nova*, 1: 333-350. A, Z; Taschini, M. (1970), La Grotta Breuil al Monte Circeo. Per un'impostazione dello studio del Pontiniano. *Origini,* 4: 45-78. A; Tattersall, I. (1995), *The Last Neanderthal. The Rise, Success, and Mysterious Extinction of our Closest Human Relatives*. New York: Neuvramont. P

Code data collected by: Giulia Marciani, Erica Piccirilli, Marco Peresani, Stefano Benazzi

1. **BROION**, Riparo del Broion
2. Shelter located on the eastern slope of the Berici Hills, at 135 m a.s.l. up a steep cliff face that connects the peak of Mount Brosimo (327 m a.s.l.) to the Friulian-Venetian plain, Italy; 45°28' N, 11°33' E.
3. A.Broglio 1998 – 2006 (excavation); M.Romandini and M.Peresani 2006 – 2018 (excavations); human tooth was discovered in 2018.
4. Stratified deposits.
5. No
6. Stratigraphic unit 11.
7.1 Mousterian.
7.2 –
7.3 No
7.4 No
7.5 No
7.6 No
7.7 No
8.1 Large mammals.
8.2 –
9.1 No
9.2 Bones (fauna), C14, 50,000 to 45,700 cal BP (95% confidence interval), Unit 11 (Romandini et al. 2020).
9.3 Late Pleistocene, evidence for the Middle-to-Upper Paleolithic transition; unit 11 MIS 3 Greenland Interstadial 14-12 (ca. 54.2-43.3 ka) (Rasmussen et al., 2014; Romandini et al., 2020).
10. Riparo Broion 1.
10.1 –
10.2 Riparo Broion 1: juvenile, 11-12 years old (Romandini et al. 2020).
10.3 –
10.4 Riparo Broion 1: RdC[1] (Romandini et al. 2020).
10.5 –
11. –
12. –
13. –
14.1 Thin layer (~1 mm) from a small area of the root surface, thus obtaining a sample of dentine.
14.2 –
14.3 –
14.4 –
14.5 Mitochondrial.
14.6 –
14.7 –
14.8 –
14.9 –

14.10 –

15. No

16. Yes (Silvestrini et al. 2022, 2024).

17. Romandini, M., et al. (2020), A late Neanderthal tooth from northeastern Italy. *Journal of Human Evolution*, 147, 102867. P; Silvestrini, S., et al. (2022), Integrating ZooMS and zooarchaeology: new data from the Uluzzian levels of Uluzzo C Rock Shelter, Roccia San Sebastiano cave and Riparo del Broion. *PLoS ONE*, 17(10), e0275614. A, Z; Silvestrini, S., et al. (2024), Hunting game: New data on the subsistence strategies during the Uluzzian in Italy. *Journal of Archaeological Science: Reports*, 57, 104575. A, Z

Code data collected by: Giulia Marciani, Erica Piccirilli, Marco Peresani, Stefano Benazzi

1. **BUCA DEL TASSO**, Rockshelter Buca del Tasso

2. Left flank of the valley of the river Carpigna (415 m asl and 15-20 m above the present river bed), 1 km SE of Metato, Alpi Apuane, Lucca, Italy; 43°57’05” N, 10°20’27” E.

3. N. Puccioni 1919 – 1922 (excavations).

4. Cave deposits (Puccioni et al., 1922; Gennai, 2024).

5. No

6. In the inner part of the cave: layer A (Puccioni et al., 1922; Gennai, 2024).

7.1 Mousterian (Puccioni, 1922; Palma di Cesnola, 1970, 1980; Cotrozzi et al., 1985; Gennai 2024).

7.2 Levallois (Puccioni, 1922; Palma di Cesnola, 1970, 1980; Cotrozzi et al., 1985; Gennai 2024).

7.3 No

7.4 No

7.5 No

7.6 No

7.7 No

8.1 Large mammals and small mammals (Stefanini et al. 1922; Gennai 2024).

8.2 No

9.1 No

9.2 No

9.3 Relative dating: >40 ka (Th/U) based on comparison with deposits in the nearby Grotta dell’Onda and Buca della Iena (Cotrozzi et al., 1985). Würm I / Early Würm II (Cotrozzi et al., 1985).

10. Buca del Tasso 1.

10.1 –

10.2 Child of about 9 yrs (based on dimensions).

10.3 Diaphysis of left femur (d).

10.4 –

10.5 –

11. Museo di Antropologia ed Etnologia, via del Proconsolo 12, 50122 Firenze, Italy.

12. Dipartimento di Scienze Archeologiche, Università di Pisa, V. Santa Maria 53, 56100 Pisa, Italy.

13. –

14.1 –

14.2 –

14.3 –

14.4 –

14.5 –

14.6 –

14.7 –

14.8 –

14.9 –

14.10 –

15. No
16. No
17. Cotrozzi, S., Mallegni, F., & Radmilli, A.M. (1985), Fémur d'un enfant néandertalien dans la Buca del Tasso a Metato, Alpi Apuane (Italie). *L'Anthropologie* 89: 111-116. P; Gennai (2024), *The Mousterian in North-Western Tuscany: new data from the Piano di Mommio Sites.* Preprint in Open Research Europe. A; Palma di Cesnola, A. (1970), Cenni sui più antichi insediamenti umani della Alpi Apuane*. Lavori Soc. Ital. Biogeogr*., 1: 715-740. A; Palma di Cesnola, A. (1980), Il paleolitico della Toscana settentrionale. *Atti Congr. "La Toscana Settentrionale dal Paleolitico all'Alto Medioevo"* (Lucca, 1978), 23-39. A; Puccioni, N. (1922), Esplorazione sistematica della Buca del Tasso. Industria e resti scheletrici umani*. Arch. Antropol. Etnol.,* 52: 23-44. A, P; Stefanini, G., et al. (1922), La Buca del Tasso a Metato (Alpi Apuane), scavi del 1919, 1920-22. *Arch. Antropol. Etnol.,* 57: 3-44. A
18. Buca del Tasso 1 originally indicated a femur which was subsequently demonstrated to belong to a cervid (Cotrozzi et al., 1985); consequently, the hominid femur now indicated as Buca del Tasso 1 was previously indicated as Buca del Tasso 2 (or BdT 2).

Code data collected by: Giulia Marciani, Erica Piccirilli, Marco Peresani, Stefano Benazzi

1. **CALASCIO**, Rockshelter I "Grottoni di Calascio"
2. Southern slope of the Gran Sasso (near Calascio, L'Aquila, Italy); 42°19'12" N, 13°20'27" E.
3. F. Giustizia 1978.
4. Cave deposits (Giustizia, 1979; Mallegni, 1981).
5. No
6. Below a large rock, laying on the surface in the inner part of the shelter (Giustizia, 1979; Mallegni, 1981).
7.1 Mousterian (Giustizia, 1979).
7.2 Levallois (Giustizia, 1979).
7.3 No
7.4 No
7.5 No
7.6 No
7.7 No
8.1 Large mammals (Giustizia, 1979).
8.2 No
9.1 No
9.2 No
9.3 Relative dating: probably Würm I based on stratigraphic and faunal evidence.
10. Calascio 1.
10.1 –
10.2 Juvenile (incomplete fusion, 12-14 years, Mallegni, 1981).
10.3 R caput femoris (d-f).
10.4 –
10.5 –
11. Sezione di Paleontologia Umana, Dipartimento di Scienze Archeologiche, Università di Pisa, via S. Maria 53, 56100 Pisa, Italy.
12. –
13. –
14.1 –
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No

17. Giustizia, F. (1979), Stanziamenti del Paleolitico inferiore e medio sul massiccio del Gran Sasso d'Italia. Nuovi rinvenimenti. *Geoarcheologia*, 7: 29-42. A; Mallegni, F. (1981), Testa di femore di Homo antiquus neanderthalensis rinvenuto nel riparo musteriano "I Grottoni" a Calascio (L'Aquila). *Archivio per l'Antropologia e la Etnologia*, CXI: 289-290. P

Code data collected by: Giulia Marciani, Erica Piccirilli, Marco Peresani, Stefano Benazzi

1. **CAVALLO**, Grotta del Cavallo, Grotta di Uluzzo A
2. Uluzzo Bay (15 m asl), 3 km from Santa Caterina, Nardò (Lecce, Puglia, Italy); 40°09'15" N, 17°57'36" E.
3. Cavallo 1: excavation 1963-1966 (first published in Palma di Cesnola, Messeri 1967) Cavallo 4: (first Published in Fabbri et al. 2016). Cavallo 7, Cavallo 8: identified during the faunal study (Fabbri e Vincenti 2020).
4. Cave deposit.
5. No
6. Cavallo 1: layer L (Mousterian), Cavallo 4: layer FIIIb (Mousterian) (Fabbri et al. 2016). Cavallo 7: layer M2f (Mousterian), Cavallo 8: layer M2a (Mousterian) (Fabbri e Vincenti 2020).

7.1 Layer L, layer FIIIb: Mousterian; layer M2f, layer M2a: pre Mousterian.

7.2 Layer L: Discoid (Romagnoli 2012); Layer FIIIb: Levallois, Unidirectional, SSDA; layer M2f, layer M2a: Quina, flake production (Sarti, Martini 2020).

7.3 No

7.4 No

7.5 Yes – 126 retouched tools on fragments of *C. chione* valves (layer L) (Romagnoli et al. 2015).

7.6 No

7.7 Fireplace possible related to stones (Martini, Sarti 2020).

8.1 Large mammals (Palma di Cesnola, 1975; Messeri e Palma di Cesnola, 1976; Berto and Sala 2020).

8.2 Yes – herbaceous, shrubs/tree (Ricciardi 2020).

9.1 No

9.2 Fi 0822 + Fi 0824 (charcoal), C14, 40,600 ± 1,500 ka BP, layer FII, (Fabbri et al. 2016; Sarti 2020).

9.3 Würm/ Würm I-II (Cavallo 1) based on faunal and stratigraphic association (Palma di Cesnola, 1975; Messeri e Palma di Cesnola, 1976); Layer F (end of the Mousterian) – MIS 3, between interstadial GI12 and stadial GS12 (based on climate stratigraphy); beginning of stratification in MIS 7, with significant depositional events occurring during MIS 5d (based on faunal taxa composition and stratigraphy) (Sarti.Martini 2020).

10. Cavallo 1 (Cavallo A), Cavallo 4 (Cavallo D), Cavallo 7 (Cavallo G), Cavallo 8 (Cavallo H).

10.1 –

10.2 Cavallo 1: juvenile, less than 12 years (dental eruption), Cavallo 4: juvenile, around 6 years (root resorption), Cavallo 7: juvenile, less than 12 years (root resorption and wear stage), Cavallo 8: juvenile, around 7 years (root resorption and wear stage).

10.3 –

10.4 Cavallo 1: LdM_2; Cavallo 4: RdI_1; Cavallo 7: LdM_2; Cavallo 8: LdI^1.

10.5 –

11. –

12. –

13. –

14.1 –

14.2 –

14.3 –

14.4 –

14.5 –

14.6 –

14.7 –

14.8 –

14.9 –

14.10 –

15. No

16. No

17. Benazzi, S., et al. (2011), Early dispersal of modern humans in Europe and implications for Neanderthal behaviour. *Nature*, 479: 525-528. P; Berto, C., Sala, B. (2020), I grandi mammiferi (strati F-N). In Museo e Istituto fiorentino di Preistoria (Ed.), *Il Musteriano di Grotta del Cavallo nel Salento (scavi 1986 – 2005)*. Culture e ambienti, Firenze, 65-74. Z; Boscato, P., Crezzini, J. (2012), Middle-Upper Palaeolithic transition in Southern Italy: Uluzzian macromammals from Grotta del Cavallo (Apulia). *Quaternary International*, 252: 90-98. Z; Fabbri, P.F., et al. (2016), Middle Paleolithic human deciduous incisor from Grotta del Cavallo, Italy. *American Journal of Physical Anthropology*, 161: 506-512. P; Fabbri, P.F., Vincenti, G. (2020), I fossili umani neanderthaliani. In Museo e Istituto fiorentino di Preistoria (Ed.), *Il Musteriano di Grotta del Cavallo nel Salento (scavi 1986 – 2005).* Culture e ambienti, Firenze, 515-526. P; Martini-Sarti. (2020), Uso dello spazio nella sequenza musteriana: paleosuperfici, strati spessi, strutture e sotto-strutture. In Museo e Istituto fiorentino di Preistoria (Ed.), *Il Musteriano di Grotta del Cavallo nel Salento (scavi 1986 – 2005)*. Culture e ambienti, Firenze, 461-513. A; Messeri, P., Palma di Cesnola, A. (1976), Contemporaneità di paleantropi e fanerantropi sulle coste dell'Italia meridionale. *Zephyrus*, 26-27: 7-30. P, A; Moroni, A., et al. (2018), Grotta del Cavallo (Apulia – Southern Italy). The Uluzzian in the mirror. *Journal of Anthropological Sciences*, 96, 125-160. A, P; Palma di Cesnola, A., Messeri, P. (1967), Quatre dents humaines paléolithiques trouvées dans des cavernes de l'Italie méridionale*. L'Anthropologie*, 71: 249-261. P; Palma di Cesnola, A. (1975), Puglia. In A.M. Radmilli (ed.), *Guida della Preistoria Italiana*. Firenze: Sansoni, 166-169. A; Ricciardi (2020), Archeopalinologia della sequenza musteriana. In Museo e Istituto fiorentino di Preistoria (Ed.), *Il Musteriano di Grotta del Cavallo nel Salento (scavi 1986-2005).* Culture e ambienti, Firenze, 123-133. E; Romagnoli, F. (2012), *Risorse litiche e comportamento tecnico dei Neandertaliani: variabilità culturale e adattamento all'ambiente nel Salento. Grotta del Cavallo, strati L-N, e Grotta Mario Bernardini, strato D.* PhD. Dissertation with European mention, Università degli Studi di Firenze, Universitat Rovira i Virgili. A, R; Romagnoli, F., et al. (2015), Neanderthal use of *Callista chione* shells as raw material for retouched tools in South-East Italy: Analysis of Grotta del Cavallo layer L assemblage with a new methodology. *Journal of Archaeological Method and Theory*, 22: 1007-1037. A, Z; Sarti, L. (2020), Il sito: il contesto geomorfologico, la serie stratigrafica musteriana, la cronologia. In Museo e Istituto fiorentino di Preistoria

(Ed.), *Il Musteriano di Grotta del Cavallo nel Salento (scavi 1986 – 2005).* Culture e ambienti, Firenze, 31-44. A, E; Sarti, L., Martini, F. (2020), Il musteriano di Grotta del Cavallo nel contesto pugliese (MIS 7-3). In Museo e Istituto fiorentino di Preistoria (Ed.), *Il Musteriano di Grotta del Cavallo nel Salento (scavi 1986 – 2005)*. Culture e ambienti, Firenze, 527-561. A

18. Remains with IDs cavallo 2 (B), Cavallo 3 (C), Cavallo 5 (E), Cavallo 6 (F) are attributed to *Homo sapiens sapiens* and therefore not discussed in detail here.

Code data collected by: Jean-Luc Voisin

1. **CHÂTEAUNEUF – HAUTEROCHE**, Hauteroche
2. Near the village of Châteauneuf-sur-Charente, 20 km West of Angoulême, Charente, France. Coordinates: 45°41' N, 0°25' E (these coordinates are the same as the Melon cave which is adjoining to the Hauteroche shelter).
3. G. Chauvet 1906 (discovery) and 1908 – 1910 (excavations), a succession of excavators followed until the 1960s, when C. Cauvin and J. Cauvin took over.
4. Occupation deposits.
5. No
6. Level 2.
7.1 Mousterian (level 2 and level 3).
7.2 Mousterian with denticulate – level 2; Mousterian Quina type – level 3.
7.3 No
7.4 No
7.5 No
7.6 No
7.7 One fire place – Level 2; three fire places – level 3.
8.1 Not studied.
8.2 No
9.1 No
9.2 No
9.3 No
10. Chateauneuf 2; Chateauneuf 3. MNI: 2.
10.1 –
10.2 Chateauneuf 2: Between 5 to 6 years old (tooth maturation).
10.3 Chateauneuf 2: calvaria (ff), maxillary bone (f) with L and RdI^1, L and RdI^2, L and RdC', L and RdM^1, L and RdM^2, mandible (ff), cervical vertebra (ff)
10.4 Chateauneuf 2: RdI_1, RdC_1, L and RdM_1, L and RdM_2, LC_1 (germ), LP_3 (germ), RP_4 (germ), L and RM_1, LM_2; Chateauneuf 3: adult incisor.
10.5 –
11. Musée d'Angoulême, Square Girard II (rue Corneille), 16000 Angoulême, France.
12. –
13. –
14.1 No
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No

17. Cauvin C., Cauvin J. (1969), Découvertes de restes humains moustériens à l'abri de Hauteroche, Chateauneuf-sur-Charente. *Comptes Rendus Hebdomadaires des Séances de l'Académie des Sciences, Série D – Sciences Naturelles* 268 (1), 37-40. P; Chauvet G. (1912), Moustérien supérieur et Aurignacien à Hauteroche près de Châteauneuf (abri de la grotte à Melon). *Bulletins et Mémoires de la Société archéologique et historique de la Charente*, Série 8, tome 3, 103 (CIII) – 116 (CXVI). A; Debénath A. (1973), Un foyer aménagé dans le moustérien de Hauteroche à Chateauneuf-sur-Charente. *L'Anthropologie (Paris)* 77 (3-4), 329-338. A; Tillier A.-M. (1979), La dentition de l'enfant moustérien de Chateauneuf 2 découvert à l'abri de Hauteroche (Charente). *L'Anthropologie (Paris)* 83 (3), 417-438. P, R
18. The name Chateauneuf should be avoided as there are at least two sites which yielded human remains around Chateauneuf.

Code data collected by: Jean-Luc Voisin

1. **CHÂTEAUNEUF – LA GROTTE À MELON**, La Grotte à Melon
2. Rock shelter near the village of Châteauneuf-sur-Charente, 20 km West of Angoulême, Charente, France; 45°35'51" N, 0°04'49" W (these coordinates are the same as the Hauteroche shelter which is adjoining to the Grotte à Melon).
3. Discovered by Mr Jarraud at the beginning of the 20th century. The site was then excavated by Mr Chauvet and Mr. Coiffard. Mr. Raveau did further excavations in the 20s, following by Mr. Marry in the 40's.
4. Mainly loess deposits.
5. No burial, but Châteauneuf 1 has been discovered inside a fire palce.
6. Chateauneuf 1 has been found in layer 3 (or layer 2 according to Chauvet stratigraphy).

7.1 Mousterian.
7.2 No data.
7.3 Seems to be rich in different animal artifacts which were used by Neandertal.
7.4 No
7.5 No
7.6 Yes
7.7 Fire places (level 3).
8.1 Not studied but some levels/layers have a numerous animal remains.
8.2 No
9.1 No
9.2 No
9.3 No

10. Châteauneuf 1: mandible with 2 teeth.

10.1 –
10.2 Châteauneuf 1: 3 years old, based on size and teeth eruption.
10.3 Châteauneuf 1: mandible (ff) with RdC_1 and RdM_1.
10.4 Châteauneuf 1: RdC_1 (was found close to the mandible).
10.5 –

11. Laboratoire Paléontologie, Evolution, Paléoécosystèmes, Paléoprimatologie (PALEVOPRIM) – UMR (CNRS) 7262 – Université de Poitiers – UFR SFA, Bât. B35 – TSA 51106, 86073 Poitiers Cedex 9 (Châteauneuf 1), France.
12. –
13. –

14.1 –
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –

15. No

16. No
17. Cauvin M.-C., Cauvin J. (1969), Découverte de restes humains moustériens à l'abri de Hauteroche, Châteauneuf-sur-Charente. *Comptes Rendus Hebdomadaire de l'Académie des Sciences de Paris*, *Série D – Sciences naturelles* 268, 37-40. P, A, Str; Chauvet G. (1910), Note préliminaire. *Bulletins et Mémoires de la Société Archéologique et Historique de la Charente*, Série 8, tome 1, 7-169. A; Chauvet G. (1912), Moustérien supérieur et Aurignacien à Hauteroche près de Châteauneuf (abri de la grotte à Melon). *Bulletins et Mémoires de la Société Archéologique et Historique de la Charente*, Série 8, tome 3, 103 (CIII) – 116 (CXVI). A; Patte E. (1957), *L'enfant néandertalien du Pech de l'Azé*. Masson, Paris, 230. (There's a long appendix on the mandible e Chateauneuf 1). P, R
18. The name Chateauneuf should be avoided as there are at least two sites which yielded human remains around Chateauneuf.

Code data collected by: Damian Stefański

1. **CIEMNA CAVE**
2. Cave site, southern Poland, near Krakow; 50°11'48" N, 19°49'54" E.
3. P. Valde-Nowak et al. 2010.
4. Cave deposits, loess.
5. No
6. Layer 2.3/3 within geological series IV (layers 5–2.2).
7.1 Level III: late Micoquian.
7.2 Levallois, Bifacial, Other.
7.3 No
7.4 No
7.5 No
7.6 No
7.7 No
8.1 Large mammals, small mammals, not studied.
8.2 Shrubs/tree- anthracological analysis (unpublished).
9.1 No
9.2 Poz-61103, CK/layer 3, bone, C14: 45000 ± 2000 BP; Poz-61096, CK/layer 3, bone, C14: 46000 ± 3000 BP (P. Valde-Nowak, et al. 2016a).
9.3 MIS 3 (geology).
10. Ciemna 1(JC13083).
10.1 –
10.2 Ciemna 1: younger adult (≈ 20–40-year-old) (incisor wear).
10.3 –
10.4 RI_2 (or RI_1?).
10.5 Dentin exposure can be estimated as stage 4 or 5; toothpick grooves.
11. Muzeum Archeologiczne w Krakowie, Senacka 3, 31-002 Kraków, Poland.
12. Institut Català de Paleoecologia Humana i Evolució Social: Tarragona, Spain.
13. –
14.1 No
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No
17. Alex, B. et al. (2017), Late Middle Paleolithic of Southern Poland: Radiocarbon dates from Ciemna and Obłazowa Caves. *Journal of Archaeological Science: Reports* 11: 370-380. A; Valde-Nowak, P., et al. (2016a), The Middle Palaeolithic sequence of Ciemna Cave. Some aspects of the site formation process. *Quartär* 63: 33-46. A, E, D; Valde-Nowak, P. et al. (2014), Middle Paleolithic sequences of the Ciemna Cave (Prądnik valley, Poland): The problem of synchronization. *Quaternary International* 326-327: 125-145. A, E; Valde-Nowak, P. et al. (2016b), Late Middle Palaeolithic occupations in Ciemna Cave, southern Poland. *Journal of Field Archaeology* 41: 193-210. A, E; Willman, J. C. et al. (2019), Paleobiology and Taphonomy of a Middle Paleolithic Neandertal Tooth from Ciemna Cave, Southern Poland. *Journal of Paleolithic Archaeology* 2: 359-377. P, E

Code data collected by: Giulia Marciani, Erica Piccirilli, Marco Peresani, Stefano Benazzi

1. **CIOTA CIARA**
2. 670 m asl on the Western side of Monte Fenera, left flank of the Sesia Valley near the Town of Borgosesia, Vercelli, Italy; 45°42'39" N, 8°18'39" E.
3. Uncontrolled excavations 1955 – '56 (Ciota Ciara 1, identified by A. Mottura); P. Gallo and F. Strobino, May, 1989 (Ciota Ciara 2 and 3).
4. Reworked cave deposit.
5. No
6. Ciota Ciara 1: reworked sediment; Ciota Ciara 2 and 3: reworked eroded surface of the Mousterian deposit, in the vestibular area of the main entrance of the cave (Strobino, 1993; Villa and Giacobini, 2005).
7.1 Mousterian (Fedele, 1966; Fedele et al., 1966).
7.2 S.S.D.A., discoid and Levallois (Daffara et al. 2014).
7.3 No
7.4 No
7.5 No
7.6 No
7.7 No
8.1 No
8.2 No
9.1 No
9.2 No
9.3 –
10. Ciota Ciara 1; Ciota Ciara 2; Ciota Ciara 3.
10.1 –
10.2 Ciota Ciara 1: adult (morphology and dimensions); Ciota Ciara 2: adult (dental maturation and wear); Ciota Ciara 3: juvenile (permanent tooth, no wear).
10.3 Ciota Ciara 1: squamous portion of right temporal bone (d-f).
10.4 Ciota Ciara 2: RM_2; Ciota Ciara 3: RP^3.
Right mandibular molar, M2.
10.5 –
11. Soprintendenza Archeologica di Torino, Piazza S. Giovanni 1, 10122 Torino (Ciota Ciara 1); Dipartimento di Anatomia Farmacologia e Medicina Legale, Università di Torino, Corso M. d'Azeglio 52, 10126 Torino (Ciota Ciara 2 and 3), Italy.
12. Dipartimento di Anatomia Farmacologia e Medicina Legale, Università di Torino, C.so M. d'Azeglio 52, 10126 Torino, Italy.
13. –
14.1 –
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –

14.8 –
14.9 –
14.10 –
15. No
16. No
17. Daffara, S., et al. (2014), The Mousterian lithic assemblage of the Ciota Ciara cave (Piedmont, Northern Italy): Exploitation and conditioning of raw materials. *Journal of Lithic Studies*, 1(2), 63-78. https://doi.org/10.2218/jls.v1i2.1102. A, R; Fedele, F. (1966), La stazione paleolitica del Monfenera (Borgosesia). *Rivista di Studi Liguri*, 32: 5-105. A; Fedele, F., et al. (1966), Ricerche sui giacimenti quaternari del Monfenera. Nuovo scavo nella grotta "Ciota Ciara". *Rivista di Antropologia*, 53: 101-111. A; Giacobini, G. (1992), New discoveries of Palaeolithic human remains in Italy. In M. Toussaint (ed.), *Cinq Millions d'Années, l'Aventure Humaine.* E.R.A.U.L., 56: 199-205. P; Mottura, A. (1980), Un frammento di osso temporale di tipo neandertaliano dal Monfenera, Vercelli (Piemonte). *Antropologia Contemporanea*, 3: 373-379. P; Strobino, F. (1993), La stazione preistorica del Monte Fenera vicino a Borgosesia (Vercelli). Ricerche e scoperte in un deposito della grotta Ciota Ciara. Rinvenimento di due denti attribuiti all'uomo di Neandertal. *Bulletin d'Etudes Préhistoriques Alpines (Aost),* 24 (1992 – 1993): 207-210. P, A; Villa, G., Giacobini, G. (1996), Neandertal teeth from Alpine caves of Monte Fenera (Piedmont, Northern Italy): description of the remains and microwear analysis. *Anthropologie*, 34: 55-67. P
18. Ciota Ciara 2 and 3 have been respectively indicated as Fenera 2 and Fenera 3 by Villa e Giacobini (1996).

Code data collected by: Jean-Luc Voisin

1. **COMBE-GRENAL**
2. Cave, near the village of Domme, Dordogne, France, 10 km South East from Sarlatla-Canéda (also named Sarlat); 44°48'23" N, 1°13'33" E.
3. E. & D. Peyrony about 1930, F. Bordes about 1953.
4. Occupation deposit.
5. No
6. E. & D. Peyrony collection (out of stratigraphy): Combe-Grenal 27 (MNP 40-1-1); Combe-Grenal 28 (MNP 40-1-2); Combe-Grenal 29 (MNP 40-1-3); Combe-Grenal 30 (MNP 40-1-4).
   Bordes collection: Level 25 (Combe-Grenal X (n°98), Combe-Grenal XI (n°133), Combe-Grenal 23 (n°1240), Combe-Grenal III, Combe-Grenal 26, Combe-Grenal XIII, Combe-Grenal 21, Combe-Grenal 149, Combe-Grenal 567, Combe-Grenal I (n°738), Combe-Grenal VI, Combe-Grenal V (n°742), Combe-Grenal VIII, Combe-Grenal IX, Combe-Grenal 845, Combe-Grenal 25, Combe-Grenal A, Combe-Grenal B, Combe-Grenal C, Combe-Grenal IV, Combe-Grenal XII, Combe-Grenal XIV, Combe-Grenal 22, Combe-Grenal 24); Level 35 (Combe-Grenal II); Level 39 (Combe-Grenal XV); Level 60 (Combe-Grenal 31).

7.1 Mousterian.
7.2 Quina and discoid.
7.3 No
7.4 No
7.5 No
7.6 Yes
7.7 No
8.1 Large mammals.
8.2 No
9.1 No
9.2 TL (see Mellars, 1986; no more information available).
9.3 Relative dating is based on fauna, lithic industries and stratigraphy: MIS 6-3.

10. Bordes collection: Combe-Grenal X, Combe-Grenal XI, Combe-Grenal 23, Combe-Grenal III, Combe-Grenal 26, Combe-Grenal XIII, Combe-Grenal 21, Combe-Grenal 149, Combe-Grenal 567, Combe-Grenal I, Combe-Grenal VI, Combe-Grenal V, Combe-Grenal VIII, Combe-Grenal IX, Combe-Grenal 845, Combe-Grenal 25, Combe-Grenal A, Combe-Grenal B, Combe-Grenal C, Combe-Grenal IV, Combe-Grenal XII, Combe-Grenal XIV, Combe-Grenal 22, Combe-Grenal 24, Combe-Grenal 32, Combe-Grenal 33, Combe-Grenal II, Combe-Grenal XV, Combe-Grenal 31. Collection E. & D. Peyrony: Combe-Grenal 27, Combe-Grenal 28, Combe-Grenal 29, Combe-Grenal 30.

10.1 Combe-Grenal I: male (bone robustness).
10.2 Combe Grenal I: 6,5 to 7,2 years old (teeath wear, roots resorbtion and teeth growth); Combe-Grenal III: 13/14 years old (the size of the remaining part of the M3 socket); Combe-Grenal IV: 12 – 15 years old (dental wear); Combe-Grenal XIII: 7 / 8 years old (dental wear); Combe-Grenal IX: 12 years old (roots not closed).
10.3 Combe-Grenal 149: frontal bone (ff); Combe-Grenal A: parietal (ff); Combe-Grenal B: parietal (ff); Combe-Greanl C: parietal (ff); Combe-Grenal II: frontal fragment (ff)

(lost); Combe-Grenal III: juvenile mandible L (ff) with cut marks; Combe-Grenal I (n°738): child mandible (ff) R with I_2, dc_1, dm_1, dm_2, M_1; Combe-Grenal IV: juvenile mandible L with Pm_4 and M_1 (ff) with cut marks; Combe-Grenal 32 (C-G N): 1st rib R (ff) with cut marks; Combe-Grenal 33 (C6G G4N): rib 8 or 9 R (ff); Combe-Grenal 567(named Combe-Grenal X by Le Mort (1989)): humerus (ff) with cut marks; Combe-Grenal 21: metacarpal R (?) (ff); Combe-Grenal 23 (n°1240): proximal hand phalanx ray II or III (ff); Combe-Grenal 22: hand proximal phalanx L, ray IV (f); Combe-Grenal 24: proximal hand phalanx L (?); ray IV (?) (f); Combe-Grenal 25: middle hand phalanx (i), ray II (R); Combe-Grenal 26: distal hand phalanx (i), R, ray II; Combe-Grenal 30 (MNP 40-1-4): talus L (f); Combe-Grenal 845: proximal phalanx of left hallux (i).

10.4 Combe-Grenal X (n°98): LI^2;Combe-Grenal XI (n°133): RI^1; Combe-Grenal XIII: RM^1; Combe-Grenal VI (now placed in the Combe-Grenal I mandible): LI_2; Combe-Grenal V (n°742): LI^1; Combe-Grenal VIII: LP_4(according to Garralda & Vandermmersch, 2000) but R for Genet-Varcin (1982)) (f); Combe-Grenal IX: RM^2; Combe-Grenal XII: LM_3; Combe-Grenal XV: RP_3 (ff); Combe-Grenal 31: RdI_1; Combe-Grenal 27 (MNP 40-1-1): RI^1; Combe-Grenal 28 (MNP 40-1-2): LP^3; Combe-Grenal 29 (MNP 40-1-3): LP_4; Combe-Grenal 14: M (ff).
10.5 Combe-Grenal 3: vitamin deficiency; Combe-Grenal IV: incipient periodontitis; Combe-Grenal 27: some traces of hypercementosis; Combe-Grenal 28: hypercementosis; Combe-Grenal XII: hypercementosis; Combe-Grenal 567: Osteoarthritis; Combe-Grenal 30: Osteoarthritis.

11. Collection Peyrony: Musée National de la Préhistoire, 1 rue du Musee, 24620 Les Eyzies-de-Tayac-Sireuil France. Collection Bordes: Musée National de la Préhistoire, 1 rue du Musee, 24620 Les Eyzies-de-Tayac-Sireuil France.
12. –
13. –
14.1 No
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No
17. Bordes F. (1955), La stratigraphie de la grotte de Combe-Grenal (Dordogne). Note préliminaire. *Bulletin de la Société Préhistorique Française*, 52 (7), 426-429. https://doi.org/10.3406/bspf.1955.3230. D, A; Bordes F. (1972) *A tale of two caves*. Harper & Row, New York, 169, Bordes F. et al. (1965), Observations sur les faunes du Riss et du Würm I en Dordogne. *L'Anthropologie (Paris)* 69, 31-46. Z; Dayet L. et al. (2019), Manganese and iron oxide use at Combe-Grenal (Dordogne, France): a proxy for cultural change in Neanderthal communities. *Journal of Archaeological Science:*

Reports 25, 239-256. https://doi.org/10.1016/j.jasrep.2019.03.027. A; Garralda M., Vandermeersch (2000), Les néandertaliens de la grotte de Combe-Grenal (Domme, France). Paléo 12, 213-259. https://doi.org/10.3406/pal.2000.1603. P, R; Garralda M. et al. (2005), Neanderthal cutmarks: Combe-Grenal and Marillac (France). A SEM analysis. Anthropologie (Brno) 43 (2), 189-198. https://www.jstor.org/stable/26292733. P, A; Garralda M. et al. (2022), Dental paleobiology in a juvenile Neanderthal (Combe-Grenal, Southwestern France), *Biology* 11 (9), 1352. (12) https://doi.org/10.3390/biology11091352. P; Gómez-Olivencia A. et al. (2017), Two newly identified Mousterian human rib fragments from Combe-Grenal (Domme, France). *Paléo* 24, 229-234; Genet-Varcin E. (1982), Vestiges humains du Wûrmien inférieur de Combe-Grenal, commune de Domme (Dordogne). *Annales de Paléontologie* 68 (2), 133-169. P, R; Le Mort F. (1989), Traces de décharnement sur les ossements neandertaliens de Combe-Grenal (Dordogne). *Bulletin de la Société Préhistorique Française* 86 (3), 79-87. https://doi.org/10.3406/bspf.1989.9367. P; Maureille M. et al. (2009 – 2010), Le plus ancien enfant d'Aquitaine: Combe-Grenal 31 (Domme, France). *Paléo* 21, 189-202. https://doi.org/10.4000/paleo.1814. P. R; Mellars P. (1986) A new chronology for the French Mousterian period. *Nature* 322, 410-411. https://doi.org/10.1038/322410a0. D

Code data collected by: Florent Rivals, Francesca Romagnoli

1. **COVA DEL GEGANT**
2. Spain; 41°35' N, 2°29' E.
3. S. Casanova 1954.
4. Cave deposits.
5. No
6. Layer XVa (GL1); Layer V (GL2).
7.1 Mousterian.
7.2 N/A
7.3 No
7.4 No
7.5 No
7.6 No
7.7 No
8.1 Large mammals, small mammals, birds, reptiles, amphibians.
8.2 Herbaceous, shrubs/trees.
9.1 Gegant-1, U-Th, 52.3 ± 2.3 ka (Daura et al., 2010).
9.2 Layer V (OSL): 55.7 ± 4.8 ka; Layer XVa (GL1) (U-Th): 49.4 ± 1.8 ka to 60.3 ± 3.8 ka (Daura et al. 2010).
9.3 –
10. Gegant-; Gegant-2; Gegant-3; Gegant-4; Gegant-5.
10.1 –
10.2 Gegant-1: adolescent/adult (teeth maturation and wear); Gegant-2: 8-10 years (tooth maturation); Gegant-3: subadult (tooth maturation); Gegant-4: 5-7 years (size); Gegant-5: 4.5-5 years (teeth maturation and wear).
10.3 Gegant-1: mandible (d), Gegant-5: mandible with L C, P_4, dM_2, M_1 (f); Gegant-4: distal fragment of the diaphysis of a L humerus(f).
10.4 Gegant-2: I_2; Gegant-3: I1 (germ).
10.5 –
11. National Museum of Archaeology of Catalonia, Passeig de Santa Madrona, 39, Sants-Montjuïc, 08038 Barcelona, Spain.
12. –
13. –
14.1 –
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No

17. Daura, J., Sanz, M. (2012), Procedencia estratigráfica de los restos humanos neanderthales de la Cova del Gegant (Sitges, Barcelona). *Mainake* 33, 215-232. A; Daura, J., et al. (2010), Stratigraphic context and direct dating of the Neandertal mandible from Cova del Gegant (Sitges, Barcelona). *Journal of Human Evolution* 59, 109-122. A, D; Daura, J., et al. (2005), A Neandertal mandible from the Cova del Gegant (Sitges, Barcelona, Spain). *Journal of Human Evolution* 49, 56-70. P; Quam, R., et al. (2015), The Neandertals of northeastern Iberia: New remains from the Cova del Gegant (Sitges, Barcelona). *Journal of Human Evolution* 81, 13-28. P; López-García, J.M., et al. (2012), A coastal reservoir of terrestrial resources for neanderthal populations in north-eastern Iberia: palaeoenvironmental data inferred from the small-vertebrate assemblage of Cova del Gegant, Sitges, Barcelona. *Journal of Quaternary Science* 27, 105-113. E; Martínez Moreno, J., et al. (1985), *Memòria de l'excavació d'urgència de la Cova del Gegant (Sitges, Garraf)*, Museu d'Història de Girona, Girona. A

Code data collected by: Francesca Romagnoli, Florent Rivals

1. **COVA FORADÀ**
2. Spain; 38°52' N, 0°5' W.
3. N/A
4. Cave deposits.
5. No
6. Level 28.
7.1 Mousterian.
7.2 N/A
7.3 No
7.4 No
7.5 No
7.6 No
7.7 N/A
8.1 N/A
8.2 N/A
9.1 No
9.2 No
9.3 Middle Palaeolithic (based on morphological traits of the human remains, the typology of lithic tools and faunal remains associated to them).
10. CF-1, CF-2, CF-3, CF-4, CF-5, CF-6, CF-7.
10.1 –
10.2 CF-1, CF-2, CF-3, CF-4, CF-5, CF-7: adults (dental wear analysis); CF-6: infant (tooth maturation).
10.3 CF-1: maxilla (nearly complete: comprises the alveoli from the right canine to the second left molar; contains the left part of the inferior nasal border, the anterior nasal spine and the nasoalveolar clivus; three teeth remain in place: the left C^1, P^3 and M^1); CF-2: cranial fragment (f); CF-3: cranial fragment (f); CF-4: cranial fragment (f); CF-5: cranial fragment (f), CF-7: fibula.
10.4 CF-1: LC^1, LP^3, LM^1; CF-6: dM-
10.5 Periodontal disease (CF-1).
11. Museo de Prehistoria de Valencia, Centro Cultural La Beneficència, C/ de la Corona, 36, Ciutat Vella, 46003 Valencia (Spain).
12. –
13. –
14.1 –
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –

15. No
16. No
17. Aparicio Pérez, et al. (2014), Los neandertales de la Cova Foradà de Oliva (estado actual de la investigación). Real Académia de la Cultura Valenciana. P; Aparicio Pérez, J. (2014), Cova Foradà (Oliva, Valencia). In: Sala Ramos, R., Carbonell, E., Bermúdez de Castro, J.M., Arsuaga, J.L. (Eds.), *Los cazadores recolectores del Pleistoceno y del Holoceno en Iberia y el Estrecho de Gibraltar: estado actual del conocimiento del registro arqueológico*. Universidad de Burgos & Fundación Atapuerca, 350-355. P., A; Lozano, M., et al. (2013), Toothpicking and Periodontal Disease in a Neanderthal Specimen from Cova Foradà Site (Valencia, Spain). *PLoS ONE* 8(10), e76852. P

Code data collected by: Florent Rivals, Francesca Romagnoli

1. **COVA NEGRA**
2. Spain, 38°59’ N, 0°31’ W.
3. J. Vilanova y Piera 1872.
4. Cave deposits.
5. No
6. Levels 11-12; Levels 5-8; Level 4.

7.1 Mousterian.
7.2 Quina; Levallois.
7.3 No
7.4 No
7.5 No
7.6 No
7.7 Hearths.
8.1 Large mammals, small mammals, birds, reptiles, amphibians.
8.2 Herbaceous, shrubs/trees.
9.1 No
9.2 Levels dated between 273 ± 26 ka and 146 ± 34 ka (ESR/U-series on herbivore teeth; Richard et al., 2019).
9.3 –

10. Parietal I: Parietal II: CN 42164a, CN 42164b, CN 42170-7310, CN 42170-7311, CN 42170-7312, CN 42170-7313, CN 42174, CN 42174 a, CN 42174 b, CN 7755, CN 42165, CN 42171, CN 42168 + 42169, N 42318, CN 42166, CN 42167, CN 42175, CN 42175, CN 42175, CN 7755, CN 7856.

10.1 –
10.2 Parietal I: adult, Parietal II: adolescent, CN 42164a: immature, CN 42164b: immature, CN 42170-7310: immature, CN 42170-7312: immature, CN 42174 a: immature, CN 42174 b: immature, CN 7755: immature, CN 42165: immature, CN 42171: immature, CN 42168: immature, CN 42169: immature, CN 42318: adolescent, CN 42166: immature, CN 42167: immature, CN 42175: LP^4, CN 42175: LdM_2, CN 42175: LM^1, CN 7755: LdM^2, CN 7856: young adult.
10.3 Parietal I: R parietal; Parietal II: R parietal; CN 42164a: L frontal(f); CN 42164b: L parietal (f); CN 42170-7310: L parietal (f); CN 42170-7311: L parietal (f); CN 42170-7312: occipital (f); CN 42170-7313: R parietal (f); CN 42174: R parietal (f); CN 42174 a: L parietal (f); CN 42174 b: L parietal (f); CN 7755: R mandibula (f); CN 42165: R radius (f); CN 42171: fibula (distal portion, f); CN 42168 + CN 42169: R femur (diaphysis, f); CN 42318: R femur (diaphysis, f); CN 42166: L fourth metatarsal; CN 42167: L third metatarsal.
10.4 CN 42175: LP^4, CN 42175: LdM_2, CN 42175: LM^1, CN 7755: LdM^2, CN 7856: RI^1.
10.5 –

11. Museo de Prehistoria de Valencia, Centro Cultural La Beneficència, C/ de la Corona, 36, Ciutat Vella, 46003 Valencia (Spain).
12. –
13. –

14.1 –
14.2 –

14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No
17. Arsuaga, J.L., et al. (2007), New Neandertal remains from Cova Negra (Valencia, Spain). *Journal of Human Evolution* 52, 31-58. P; Tortosa, J.E.A., et al. (2002), Big game and small prey: Paleolithic and Epipaleolithic economy from Valencia (Spain). *Journal of Archaeological Method and Theory* 9, 215-268. Z; Richard, M., et al. (2018), ESR/U-series chronology of early Neanderthal occupations at Cova Negra (Valencia, Spain). *Quaternary Geochronology* 283-290. A, D; Villaverde Bonilla, V. (1984), *La Cova Negra de Xàtiva y el Musteriense de la región central del Mediterráneo español*. Doctoral Thesis, Servicio de Investigación Prehistórica, Diputación Provincial de Valencia, Valencia. A

Code data collected by: Francesca Romagnoli, Florent Rivals

1. **COVA SIMANYA**, Simanya Gran
2. Spain, 41°40'N, 2°00'E.
3. M. Aznar 1978 – 1979.
4. Cave deposits.
5. No
6. Layer O300-PO400 (Unit SG1, inner part of the Main Gallery).
7.1 Mousterian.
7.2 N/A
7.3 No
7.4 No
7.5 No
7.6 No
7.7 Hearths.
8.1 Large mammals.
8.2 N/A
9.1 No
9.2 Animal bones and charcoal, C14, >49.000 (four charcoal samples are older than the radiocarbon method (>49,000); a minimum age of circa 42,000 cal BP has been obtained for a sample of *Capra pyrenaica*, other bones have not yielded sufficient collagen for 14C dating (Morales et al., 2023).
9.3 Middle Palaeolithic, based on faunal remains and lithic techno-typology.
10. Individual 1: SI-1, SI-2, SI-47, SI-20, SI-32, SI-10, SI-18, SI-14, SI-16, SI-17, SI-33, SI-43, SI-44, SI-24, SI-21, SI-19, SI-15, SI-22, SI-11, SI-9, SI-13, SI-12, SI-46, SI-56, SI-28, SI-38, SI-23, SI-34, SI-25, SI-27, SI-39; Individual 2: SI-7, SI-58, SI-60; Individual 3: SI-29, SI-51, SI-52, SI-37, SI-36, SI-61, SI-62; Not attributed to a specific individual: SI-40, SI-57, SI-45, SI-49, SI-4, SI-31, SI-6, SI-3, SI-5, SI-8, SI-26, SI-48, SI-41; MNI=3.
10.1 Individual 1: female (based on humerus metrics).
10.2 Adult specimens: SI-47, SI-20, SI-31, SI-10, SI-18, SI-14, SI-16, SI-17, SI-33, SI-43, SI-44, SI-24, SI-21, SI-19, SI-15, SI-22, SI-11, SI-9, SI-13, SI-12, SI-46, SI-56, SI-28, SI-38, SI-23, SI-34, SI-25, SI-27, SI-39, SI-1, SI-2. Preadolescent specimens (estimated age of approximately 11.5 years): SI-7, SI-60, SI-58. Immature specimens (approximate age of 7.61–7.78 years): SI-29, SI-37, SI-51, SI-52, SI-36, SI-61, SI-62. Age determination: size and morphology of bones; root development and pulp roof definition (complete crowns) for teeth. Historical and taphonomic conditions of the assemblage make it feasible to assign some specimens to individual 1 (adult).
10.3 SI-40: L ramus mandible (f); SI-57: L mandibular condyle (f); SI-37: atlas, articular facet (f); SI-48: Axis (f); SI-36: 3rd cervical vertebra, articular facet (f); SI-62: 3rd cervical vertebra, articular facet (f); SI-61: 4th cervical vertebra, articular facet (f); SI-41: Cervical vertebra, body (f); SI-1: L humerus; SI-2: R humerus (f); SI-51: radius, diaphysis (f); SI-52: radius, diaphysis (f); SI-47: R 1st hand phalanx, finger 1; SI-20: R 2nd hand phalanx, finger 2 (f); SI-32: R 1st hand phalanx, finger 3 (f); SI-10: R 2nd hand phalanx, finger 3; SI-18: R 3rd hand phalanx, finger 3; SI-14: R 1st hand phalanx, finger 4; SI-16: R 2nd hand phalanx, finger 4; SI-17: R 1st hand phalanx, finger

5 (f); SI-33: R 1st metacarpal (f); SI-43: R 2nd metacarpal (f); SI-44: R 3rd metacarpal; SI-24: R 4th metacarpal; SI-21: L 1st hand phalanx, finger 1; SI-19: L 3rd hand phalanx, finger 1 (f); SI-15: L 1st hand phalanx, finger 2; SI-22: L 1st hand phalanx, finger 3 (f); SI-11: L 2nd hand phalanx, finger 3; SI-9: L 3rd hand phalanx, finger 3; SI-13: L 1st hand phalanx, finger 4 (f); SI-12: L 2nd hand phalanx, finger 4; SI-46: L 2nd metacarpal (f); SI-56: L 4th metacarpal; SI-29: L 1st hand phalanx, finger 5; SI-26: metacarpal (f); SI-58: fibula, diaphysis (f); SI-28: R 4th metatarsal (f); SI-38: R lateral cuneiform; SI-23: L 3rd hand phalanx, finger 1; SI-34: L 1st metatarsal; SI-25: L 2nd metatarsal (f); SI-27: L 2nd metatarsal (f); SI-39: L astragalus (f).

10.4 SI-45: RI^1; SI-4: RI^2; SI-6: RP^3; SI-49: LI^1; SI-31: LI^2; SI-7: LP^3; SI-60: LM^3; SI-5: RP_3; SI-8: RM_3; SI-3: LI_1.

10.5 –

11. Specimens under study.

12. –

13. –

14.1 No positive results for aDNA were obtained, neither for shotgun sequencing nor for the mtDNA capture (Morales et al., 2023).

14.2 –

14.3 –

14.4 –

14.5 –

14.6 –

14.7 –

14.8 –

14.9 –

14.10 –

15. No

16. No

17. Morales, J., et al. (2022). Palaeolithic archaeology in the conglomerate caves of north-eastern Iberia. *Antiquity* 96, 710-718. A; Morales, J.I., et al. (2023), A new assemblage of late Neanderthal remains from Cova Simanya (NE Iberia). *Frontiers in Earth Science* 11, https://doi.org/10.3389/feart.2023.1230707. P., A

Code data collected by: Florent Rivals, Francesca Romagnoli

1. **COVALEJOS**

2. Spain; 43°25’ N, 3°24’ W.

3. E. de la Pedraja 1879.

4. Cave deposits.

5. No

6. Level 4; Level 8.

7.1 Mousterian.

7.2 Levallois; Quina.

7.3 No

7.4 No

7.5 No

7.6 No

7.7 Hearths.

8.1 Large mammals, small mammals, birds, reptiles, amphibians.

8.2 Herbaceous, shrubs/trees.

9.1 No

9.2 Level 4 (bone): 44.5 – 39 ka uncal BP (C14-AMS); Level 8 (bone) >50 ka uncal BP (C14-AMS) (Montes Barquín and Sanguino González, 2021).

9.3 –

10. CV-1; CV-3.

10.1 –

10.2 CV-1: 2-3 years; CV-3: 6-10 years (based on dental wear).

10.3 –

10.4 CV-1: LdM^1 (crown only); CV-3: RM^1 (complete).

10.5 –

11. Museo de Prehistoria y Arqueología de Cantabria (MUPAC), C. Bailén, s/n, 39004 Santander, Cantabria, Spain.

12. –

13. –

14.1 –

14.2 –

14.3 –

14.4 –

14.5 –

14.6 –

14.7 –

14.8 –

14.9 –

14.10 –

15. No

16. No

17. González Luque, C., et al. (1995), Exploraciones en el karst de Peñajorao (Cantabria). I. Cuevas del sector de Covalejos (Velo, Piélagos). *Boletín Cántabro de Espeleología* 11, 45-63. A; Martín Blanco, P., et al. (2006), La tecnología lítica del musteriense

final en la región cantábrica: los datos de Covalejos (Velo de Piélagos, Cantabria, España). In: Cabrera Valdés, V., Bernaldo de Quiros, F., Maíllo Fernández, J.M. (Eds.). *En el centenario de la Cueva del Castillo: El ocaso de los neandertales*, Universidad Nacional de Educación a Distancia, UNED, Santander, 233-248. A; Montes Barquín, R., Sanguino González, J. (2021), La cueva de Covalejos (Velo de Piélagos, Cantabria). *MUPAC*, Sandander. A, P, Z; Sanguino González, J., Montes Barquín, R. (2005), Nuevos datos para el conocimiento del Paleolítico Medio en el centro de la Región Cantábrica: La Cueva de Covalejos (Piélagos, Cantabria). In: Montes Barquín, R., Lasheras Corruchaga, J.A. (Eds.). *Actas de la Reunión Científica: Neandertales cantábricos, estado de la cuestión*, Museo Nacional y Centro de Investigación de Altamira, Santander, 489-504. A; Yravedra-Sainz de los Terreros, J. (2015), Neanderthal and Homo sapiens subsistence strategies in the Cantabrian region of northern Spain. *Archaeological and Anthropological Sciences* 8, 779-803. Z

Code data collected by: Srđan Delić, Nikola Borovinić

1. **CRVENA STIJENA**, Pećina u Petrovićima

2. Montenegro, Nikšić municipality, Petrovići village; 42°46’44” N, 18°28’51” E.

3. J. Ivović, A. Benac (1954 – 1956); Đ. Basler (1960 – 1964); G. Pajović, G. Tostevin, G. Monnier (2018 – 2024).

4. Cave deposit.

5. No

6. M5b (XVII).

7.1 Levallois Mousterian (XXXI-XXVIII), Mousterian (typical for CS) (XXVII-XXV), Mousterian with Charentian traits (XXIV), Charentian (XXIII-XX), Micro-Mousterian (XIX-XIV), Denticulated Mousterian (XIII-XII).

7.2 XXXI-XXIV – Levallois, Discoid, Expedient/flake; XXIII-XX – Levallois, Quina, Expedient /flake; XVIII-XII – Levallois, Discoid, Laminar/blade, Expedient/flake, Other.

7.3 No

7.4 No

7.5 Yes

7.6 No

7.7 Fireplaces in layers XXIV, XXII, XX.

8.1 Large mammals, small mammals, Birds, Reptile/Amphibians, Molluscs.

8.2 No

9.1 No

9.2 TL dating on burnt flints: Sample BF7, level XX, 65.5 ± 14 ka BP; Sample BF1, level XXIV – 121, 52.7 ± 6.6 ka BP; Sample BF3, level XXIV – 126, 70.0 ± 6.2 ka BP; Sample BF2, level XXIV – 127, 52.2 ± 12 ka BP. ESR on animal tooth enamel: Sample CS03, level XX, East profile, early uptake 43.3 ± 4.5 ka BP/ linear uptake 49.4 ± 5.0 ka BP; Sample CS02, level XX, East profile, early uptake: 32.5 ± 1.9 ka BP/ linear uptake: 44.3 ± 2.7 ka BP; Sample CS07, level XX, East profile, early uptake: 39.4 ± 3.2 ka BP/ linear uptake: 50.8 ± 3.7 ka BP. Sample CS04, level XX, East profile, early uptake: 42.6 ± 3.2 ka BP/ linear uptake: 48.6 ± 3.3 ka BP; Sample CS09, level XXIV, South profile, early uptake: 59.2 ± 5.6 ka BP/ linear uptake: 78.5 ± 7.4 ka BP; Sample CS01, level XXIV, South profile, early uptake: 64.5 ± 4.0 ka BP/ linear uptake: 78.0 ± 0.3 ka BP. OSL on sediments: Sample OSL-007, level XII, 37.6 ± 2.9 ka BP; Sample OSL-002, level XII, 43.2 ± 3.2 ka BP; Sample OSL-005, level XIII, 44.2 ± 3.4 ka BP. C14, cal BP: Sample GrN-6083, Layer XII, 45 092- 43 505 (68.2%), 46 104 – 42 902 (95.4%); Sample OxA-31802, M2c = Layer XII, 49 418- 46 435 (68.2%), … – 45 289 (95.4%); Sample OxA-31803, M2c = Layer XII, 49 950 – 47 168 (68.2%), … - 45 535 (95.4%); Sample OxA-31804, M3a1= Layer XIII, …- 47 750 (68.2%), … - 49257 (95.4%). All dates are from Whallon et al. 2017.

9.3 XXXI-XXX (MIS 6), XXIX-XXIV (MIS 5), XXIII-XX (MIS 4-MIS 3), XIX-XII (MIS 3) (based on lithic typology and technology).

10. #N89D-29, #N90-115.

10.1 –

10.2 –

10.3 #N89D-29 – R second or third metatarsal (MTT2-3) (d); #N90-115 – Hand proximal phalanx (PP3/4) (f).

10.4 #O87-315 – LI_2;; #O89-FVMOF – RI_1; #O89-271 – LI^2; #O89-BRCFI – RP_4; #O87-302 (A) + #O87-CDOTC (B) + O87-NCJQX (C) + N87-WLCEX (D) – LP_4.

10.5 –

11. JU Narodni muzej Crne Gore, Novice Cerovića, 81250 Cetinje, Montenegro.

12. –

13. –

14.1 No

14.2 –

14.3 –

14.4 –

14.5 –

14.6 –

14.7 –

14.8 –

14.9 –

14.10 –

15. No

16. No

17. Баслер, Ђ. (1975), Црвена Стијена – зборник радова, Никшић A, Z, R; Baković M., et al. (2009), Crvena Stijena excavation 2004 – 2006, Preliminary report. *Eurasian Prehistory* 6(1-2):3-31 A; Whallon, R. et al. (2017), Crvena Stijena in Cultural and Ecological Context -Multidisciplinary Archaeological Research in Montenegro, Cetinje A, Z, R, E, D; Monnier G., et al. (2019), Nova istraživanja paleolitskog nalazišta Crvena Stijena, istorijski kontekst, *Istorijski zapisi*, 1-2/2020, 71-108 A

Code data collected by: Florent Rivals, Francesca Romagnoli

1. **CUEVA DE CARIHUELA**, Cueva de la Carigüela

2. Spain; 37°14’ N, 3°36’ W.

3. J.-C. Spahni 1954 – 1955.

4. Cave deposits.

5. No

6. Units VIII, VI, V and IV.

7.1 Mousterian.

7.2 N/A

7.3 No

7.4 No

7.5 No

7.6 No

7.7 Hearths.

8.1 Large mammals, small mammals, birds, reptiles, amphibians.

8.2 Herbaceous, shrubs/trees (Fernández et al. 2007).

9.1 No

9.2 Unit VIII = 64.20 ka (U/Th); Unit VI = 42.4 to 58.8 ka (TL); 27.1 to >46.5 ka (C14); 27.9 to 129.9 (U/Th); Unit V = 21.1 to 42.4 ka (TL); 45.6 to 81.7 ka (ESR); 24.7 to 43.5 ka (C14); Unit IV = 19.3 to 20.9 ka (TL); 27.3 to 44.0 ka (C14) (Carrión et al., 2019).

9.3 N/A

10. CE-05877: Frontal bone; and 11 dental remains without specimen or catalogue numbers.

10.1 –

10.2 CE-05877: 6 to 7 year-old (based on geometric morphometrics); other juveniles and adults (based on dental wear).

10.3 CE-05877: Frontal bone fragment.

10.4 LdC^1; LdM^2; LI^1; LI^2; I/i; LC^1; LP^1; 2 unidentified premolars; 2 unidentified molars.

10.5 LC^1: hypoplasia.

11. Museo Arqueológico y Etnológico de Granada, Carrera del Darro, 41, 43, Albaicín, 18010 Granada, Spain; Washington State University, USA.

12. –

13. –

14.1 –

14.2 –

14.3 –

14.4 –

14.5 –

14.6 –

14.7 –

14.8 –

14.9 –

14.10 –

15. No

16. No

17. Carrión, J., et al. (1998), The palaeoenvironment of Carihuela Cave (Granada, Spain): a reconstruction on the basis of palynological investigations of cave sediments. *Review of Palaeobotany and Palynology* 99, 317-340. E; Carrión, J.S. (1992), Late quaternary pollen sequence from Carihuela Cave, southern Spain. *Review of Palaeobotany and Palynology* 71, 37-77. E; Carrión, J.S., et al. (2019), The sequence at Carihuela Cave and its potential for research into Neanderthal ecology and the Mousterian in southern Spain. *Quaternary Science Reviews* 217, 194-216. E; de Lumley, H., Garcia Sanchez, M. (1971), L'enfant néandertalien de Carigüela à Piñar (Andalousie). *Anthropologie* 75, 29-55. P; Fernández, S., et al. (2007), The Holocene and Upper Pleistocene pollen sequence of Carihuela Cave, southern Spain. *Geobios* 40, 75-90. E; García-Sánchez, M., et al. (1994), Les dents d'enfant des niveaux moustériens de la grotte de Carihuela (Grenade-Espagne). *Paleo* 6, 79-88. P; Jiménez-Arenas, J.M., et al. (2016), Digging in the museum: Preliminary report on three unpublished Neanderthal teeth from Cariguela Cave (Pinar, Granada, Spain). *American Journal of Physical Anthropology* 159, 185-186. P; Olalde, I., et al. (2019), The genomic history of the Iberian Peninsula over the past 8000 years. *Science* 363, 1230-1234. G

Code data collected by: Omry Barzilai, Ella Been

1. **EIN QASHISH**
2. Israel, Jezreel Valley; 32°41'6" N, 35°6'3"6 E.
3. E. Yannai 2004 (discovery); E. Hovers, A. Malinsky-Buller, R. Ekshtain 2005, 2009 – 2011 (excavations), O. Barzilai, E. Hovers 2013 (excavations).
4. Alluvial deposits.
5. Yes (EQ3, see remarks).
6. Unit 1 (EQH1); Layer 5a, Area A (EQH2), Layer 3b, Area B (EQH3).
7.1 Mousterian.
7.2 Levallois, expedient flake.
7.3 No
7.4 No
7.5 Yes (not modified).
7.6 Yes (small fragments of ochre).
7.7 No
8.1 Large mammals.
8.2 No
9.1 No
9.2 OSL (EQHD), Greenbaum et al. 2014. Sample 14, 40, 48, 61, layer 3a, 68±5 ka; Sample 41, 50, layer 3b (below femur), 68±5 ka; Sample 49, layer 3b (above femur), 65±3 ka; Sample 12, 43, layer 5a, 66±1 ka; Sample 44, layer 5b, 54±5.
9.3 –
10. EQH1, EQH2, EQH3.
10.1 EQH3: Male (long bones robusticity).
10.2 EQH3: 15-22 years (level of ossification).
10.3 EQH1: nondiagnostic skull fragment; EQH2: $M^{3;}$ EQH3: L femur (d), R and L tibia (f), R and L fibulae (ff).
10.4 EQH2: M^3.
10.5 An avulsion fracture of the anterior cruciate ligament (ACL).
11. Human remains: Department of Anatomy and Anthropology, Faculty of Medicine, Tel Aviv University, P.O.B 39040, Ramat Aviv, Tel Aviv 69978, Israel; Lithics: The Institue of Arachaeology, the Hebrew University of Jerusalem, Mount Scopus, Jerusalem 9190501, Israel; Fauna: The Zinman Institute of Archaeology, Univesity of Haifa, Abba Khoushy Ave 199, Haifa, 3498838, Israel.
12. 3D scan of EQH2 – Department of Cultural Heritage, Univesity of Bologna, Via degli Ariani, 1, 48121 Ravenna RA, Italy; 3D virtual reconstruction of the Femur and the tibiae – The Azrieli Faculty of Medicine Henrietta Szold St 8, Safed, Israel.
13. –
14.1 –
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –

14.8 –

14.9 –

14.10 –

15. No

16. No

17. Barzilai, O., et al. (2017), 'En Qashish ('Ein Qashish). Hadashot Arkheologiot 127 (2015) http:// www.hadashot-esi.org.il A; Been, E., et al. (2017), The first Neanderthal remains from an open-air Middle Palaeolithic site in the Levant. *Scientific Reports*, 7(1), 2958. P, A; Ekshtain, R. et al. (2014), Raw material exploitation around the Middle Paleolithic site of 'Ein Qashish. *Quaternary International* 331, 248-266. R; Ekshtain, R., et al. (2019), Persistent Neanderthal occupation of the open-air site of 'Ein Qashish, Israel. *PLoS ONE* 14(6), e0215668.A; Greenbaum, N. et al. (2014), The stratigraphy and paleogeography of the Middle Paleolithic open air site of 'Ein Qashish, Northern Israel. *Quat. Intern*. 331, 203–215, doi:10.1016/j.quaint.2013.10.037 (2014). Str; Hovers, E., et al. (2008), Ein Qashish–a new Middle Paleolithic open-air site in northern Israel. *Journal of the Israel Prehistoric Society*, 38, 7-40. A; Hovers, E., et al. (2014), Islands in a stream? Reconstructing site formation processes in the late Middle Paleolithic site of 'Ein Qashish, northern Israel. *Quaternary International*, 331, 216-233. A; Malinsky-Buller, A., et al. (2014), Organization of lithic technology at 'Ein Qashish, a late Middle Paleolithic open-air site in Israel. *Quaternary International* 331, 234-247. A; Stahlschmidt, M. C. et al. (2018), Geoarchaeological Investigation of Site formation and depositional environments at the middle Palaeolithic Open-air site of 'Ein Qashish, Israel*. Journal of Paleolithic Archaeology* 1, 32-53. A

18. The lower limb bones of EQ3 were found in partial articulation in a tight flexed position, the bones were found in between medium sized limestone rocks, an MLP (modified limestone piece) was found near the bones. Several symbolic items (seashell, roe deer antler, ochre) were unearthed in the same archaeological horizon, not far from the bones- it is proposed Ein Qashsish 3 is in fact the remains of an intentional burial of a Neandertal.

Code data collected by: Francesca Romagnoli, Florent Rivals

1. **EL CASTILLO**, El Castillo cave

2. Spain; 43°16' N, 3°56' W.

3. H. Alcalde del Río 1903; H. Obermaier, H. Breuil 1910 – 1914.

4. Cave deposits.

5. No

6. Unit XX.

7.1 Mousterian.

7.2 Levallois, Discoid, Laminar.

7.3 No

7.4 No

7.5 No

7.6 Yes

7.7 Hearths

8.1 Large mammal, small mammal, birds, reptile/amphibians.

8.2 Herbaceous, shrubs/tree (based on pollen analysis; Dari & Renault-Miskovsky, 2001).

9.1 No

9.2 Unit XX (Mousterian alpha, Obermaier's materials), ESR range around~42-47 ka BP; Unit XX (modern excavations), 14C AMS and 14C-Ultrafiltration unit XX, range around ~39-49 ka BP to ~48-49 ka BP (~47 ka BP IntCal20) (Bischoff et al., 1992; Cabrera Valdés et al., 1996; Rink et al., 1996; Bernaldo de Quirós et al., 2006; Liberda et al., 2010; Wood et al., 2018; Martín-Perea et al., 2023).

9.3 –

10. Castillo-1466, Castillo-416 and Castillo-228.

10.1 –

10.2 Castillo-1466: adult (based on tooth wear), Castillo-416: adult (based on the stage of bone development); Castillo-228: immature individual (based on size, shape and fusion stage).

10.3 Castillo-416: R proximal hand phalanx (incomplete diaphysis and distal epiphysis); Castillo-228: R femoral head (partially preserved, rolled, eroded and incomplete).

10.4 Castillo-1466: LP^4.

10.5 –

11. Museo de Prehistoria y Arqueología de Cantabria, C. Bailén, s/n, 39004 Santander, Spain.

12. –

13. –

14.1 –

14.2 –

14.3 –

14.4 –

14.5 –

14.6 –

14.7 –

14.8 –

14.9 –

14.10 –

15. No

16. No

17. Bernaldo de Quirós, F., et al. (2006), Nuevas dataciones para el Musteriense y el Magdaleniense de la Cueva de El Castillo. In: Cabrera Valdés, V., Bernaldo de Quirós, F., Maíllo-Fernández. J.M. (Eds.), *En el centenario de la cueva de El Castillo: El ocaso de los Neandertales*. Centro Asociado a la Universidad Nacional de Educación a Distancia en Cantabria, Madrid, 455-457. D, A; Bernaldo de Quirós, F., et al. (2008), The place of unit 18 of El Castillo Cave in the Middle to Upper Palaolithic transition. *Eurasian Prehistory* 5, 57-72. A; Bernaldo de Quirós, F., et al. (2010), Technological Characteristics at the End of the Mousterian in Cantabria: the El Castillo and Cueva Morin (Spain). *The Upper Palaeolithic Revolution in Global Perspective*, 153-160. A; Bischoff, J.L., et al. (1992), Uranium-series isochron dating at El Castillo Cave (Cantabria, Spain): The "Acheulean"/"Mousterian" question. *Journal of Archaeological Science* 19, 49-62. D; Cabrera Valdés, V. (1984), El yacimiento de la cueva de El Castillo (Puente Viesgo, Santander). *Consejo Superior de Investigaciones Científicas*, Madrid. A, P; Cabrera Valdés, V., Bischoff, J.L. (1989), Accelerator 14C dates for early upper Paleolithic (basal Aurignacian) at El Castillo Cave (Spain). *Journal of Archaeological Science* 16, 577-584. A; Cabrera Valdés, V., et al. (1996), La transition Paléolithique moyen-Peléolithique supérieur à El Castillo (Cantabrie): nouvelles datations par le carbone-14. *Compte-Rendus de l'Académie des Sciences de Paris* 332(IIa), 1093-1098. D.; Cabrera, V., et al. (2001), La transition vers le Paleolithique supérieur dans la grotte du Castillo (Cantabrie, Espagne): la couche 18. *L'Anthropologie* 105, 505-532. A, P; Dari, A., Renault-Miskovsky, J. (2001), Etudes paleoenvironnementales dans la grotte "El Castillo" (Puente Viesgo, Cantabrie, Espagne). *Espacio, Tiempo y Forma, Serie I, Prehistoria y Arqueología* 1, 121-144. A, E; Garralda, M.D. (2005), Los Neandertales en la Peninsula Iberica. *Munibe* 57, 289-314. A, P; Garralda M.D., et al. (2022), >42 ka human teeth from El Castillo Cave (Cantabria, Spain) Mid-Upper Paleolithic Transition. *Archaeological and Anthropological Sciences* 14, 126. P; Garralda, M.D., et al. (2023), Mousterian human fossils from El Castillo cave (Puente Viesgo, Cantabria, Spain). *Journal of Anthropological Sciences* 101, 123-142. P; González-Molina, I., et al. (2024), Technological variability in El Castillo cave during MIS 4. *Archaeological and Anthropological Sciences* 16, 132. A; Hedges, R.E.M., et al. (1994), Radiocarbon dates from the Oxford AMS System: Archaeometry Datelist 18. *Archaeometry* 36, 337-374. D, P; Klein, R.G., Cruz-Uribe, K. (1994), The Paleolithic mammalian fauna from the 1910-14 excavations at El Castillo Cave (Cantabria). *Homenaje al Dr. Joaquin Gonzalez Echegaray*, 141-158. Z; Liberda, J.J., et al. (2010), ESR dating of tooth enamel in Mousterian layer 20, El Castillo, Spain. *Geoarchaeology* 25, 467-474. D, P; Martín-Perea, D.M., et al. (2023), A step back to move forward: a geological re-evaluation of the El Castillo Cave Middle Palaeolithic lithostratigraphic units (Cantabria, northern Iberia). *Journal of Quaternary Science* 38(2), 221-234. A, P, D; Rink, W.J., et al. (1997), ESR dating of Mousterian levels at El Castillo Cave, Cantabria, Spain. *Journal of Archaeological Science* 24, 593-600. D, P; Rink, W.J., et al. (1996), ESR dating of tooth enamel: comparison with AMS 14 C at El Castillo Cave, Spain. *Journal of Archaeological Science* 23, 945-951. D, P; Sánchez Fernández, G., Maíllo-Fernández, J.M. (2006),

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Code data collected by: Francesca Romagnoli, Florent Rivals

1. **EL SALT**
2. Spain; 38°36’ N, 0°32’ W.
3. J. Bernabeu Aubán 1986.
4. Travertine formations.
5. No
6. Unit V (base).
7.1 Mousterian.
7.2 Levallois. Minor representation of the discoid method and multipolar-multidirectional.
7.3 No
7.4 No
7.5 No
7.6 No
7.7 Hearths.
8.1 Large mammal, small mammals, reptile/amphibians.
8.2 No
9.1 Human teeth (Salt-6), ESR, failed (Garralda et al., 2014).
9.2 Unit V (sediment), OSL, 47.2 ± 4.4 and 45.2 ± 3.4 ka (Galván et al., 2014; Garralda et al., 2014).
9.3 –
10. Salt 1, Salt 2, Salt 3, Salt 4, Salt 5.
10.1 –
10.2 Salt 1-5: juvenile/young adults (tooth matutration and wear)
10.3 –
10.4 Salt 1: RI^{1}; Salt 2: RP^{3}; Salt 3: RP^{4}; Salt 4: RM^{1}; Salt 5: RM^{2}; Salt 6: root fragments (destroyed for ESR).
10.5 Dental hypoplasia (Salt 2).
11. Museo Arqueológico ‘Camil Visedo Moltó’, Placeta del Carbó, s/n, 03801 Alcoi, Alicante (Spain).
12. –
13. –
14.1 –
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No

17. Fagoaga, A., et al. (2018), Palaeoecological implications of Neanderthal occupation at Unit Xb of El Salt (Alcoi, eastern Spain) during MIS 3 using small mammals proxy. *Quaternary International* 481, 101-112. A, E; Fumanal García, M.P. (1994), El yacimiento musteriense de El Salt (Alcoi, País Valenciano): rasgos geomorfológicos y climatoestratigrafía de sus registros. *SAGVNTVM Papeles del laboratorio de arqueología de Valencia* 27, 39-55. A; Galván Santos, B., (1992), El Salt (Alcoi, Alicante): Estado actual de las investigaciones. *Recerques del Museu D’Alcoi* 1, 73-80. A; Galván, B., et al. (2014), New evidence of early Neanderthal disappearance in the Iberian Peninsula. *Journal of Human Evolution* 75, 16-27. A, P, D; Garralda, M.D., et al. (2014), Neanderthals from El Salt (Alcoy, Spain) in the context of the latest Middle Palaeolithic populations from the southeast of the Iberian Peninsula. *Journal of Human Evolution* 75, 1-15. A, P, D; Herrejón-Lagunilla, A., et al. (2024), The time between Palaeolithic hearths. *Nature* 630, 666-670. A; Leierer, L., et al. (2019), Insights into the timing, intensity and natural setting of Neanderthal occupation from the geoarchaeological study of combustion structures: A micromorphological and biomarker investigation of El Salt, unit Xb, Alcoy, Spain. *PLoS ONE* 14, e0214955. A; Luis, L.J.P., et al. (2017), Paleoecología de macromamíferos aplicada a los conjuntos zooarqueológicos de El Salt y el Abric del Pastor (Alcoy, Alicante). Interaccions entre felins i humans. *III Jornades d’Arqueozoologia*, Mare Nostrum, Valencia, 327-353. A, Z, E

Code data collected by: Francesca Romagnoli, Florent Rivals, Pere Gelabert

1. **EL SIDRÓN**
2. Spain; 43°20' N, 5°16' W.
3. T. Pinto 1975; Grupo de Espeleología Gorfolí 1994.
4. Cave deposits.
5. No
6. "Galería del Osario" (a lateral gallery within the cave. The human remains where in secondary position and mainly concentrated in sectors 2 and 3 in the gallery).

7.1 Mousterian.

7.2 Levallois.

7.3 No

7.4 No

7.5 No

7.6 No

7.7 No

8.1 Large mammal, small mammals, gastropods.

8.2 No

9.1 C14 AMS: SD-500 (tooth), 40,840 ± 1,200 14C B.P. (Beta 192065); SD-599a (bone), 37,300 ± 830 B.P. (Beta 192066); and SD-763a (tooth), 38,240 ± 890 B.P. (Beta 192067). Calibrated with CalPal (www.calpal.de), the dates are 44,310 ± 978, 42,320 ± 367, and 42,757 ± 464 cal B.P., respectively, the average calibrated age being 43,129 ± 129 cal B.P. (Lalueza-Fox et al., 2005); bone fragment, 48,400 ± 3200 BP (OxA-21776; Wood et al., 2013). Amino acid racemization (human teeth): 32±11ka (Fortea et al., 2003).

9.2 Amino acid racemization: 39±7 ka (gastropods; Fortea et al., 2003). Different dating methods (14CAMS, U/TH, OSL, ESR and AAR) on different samples (charcoal debris, bone, tooth dentine, stalagmitic flowstone, carbonate-rich sediments, sedimentary quartz grains, tooth enamel and land snail shells): detrital Th contamination rendered Th/U dating analyses of flowstone unreliable. Most consistent 14C dates are grouped into two series: one between 35 and 40ka and the other between 48 and 49ka. Most ESR and AAR samples yielded concordant ages, ranging between 39 and 45ka; OSL dating results permitted adequate bracketing of the sedimentary layer that contained the human remains (De Torres et al., 2010).

9.3 –

10. Hominin teeth, cranial and post-cranial remains. The collection has been divided into the 140 specimens unprofessionally unearthed (labelled SDR) and the systematically recovered sample (labelled SD). Refitting of bones and stone tools derived from both sets largely testifies to a single archaeological deposit. All of the skeletal parts are represented in the sample and some of the remains are in anatomical connection. The assemblage also comprises all bones of the wrist, including adult scaphoids (n = 6), lunates (n = 2), triquetra (n = 4), pisiforms (n = 2), trapezia (n = 2), trapezoids (n = 5), capitates (n = 5), and hamates (n = 2), as well as one fragmentary and possibly juvenile scaphoid. Over 2500 Neandertal (*Homo neanderthalensis*) skeletal elements from at least 13 individuals (Bastir et al., 2015, 2017; Belcastro et al., 2020; Estalrrich and Rosas, 2015; Estalrrich et al., 2017; Kivell et al., 2018; Lalueza-Fox et al., 2012; Pérez-Criado and Rosas, 2017; Prieto et al., 2001; Ríos, et al., 2019; Rosas and Aguirre, 1999; Rosas et al., 2005, 2006, 2008, 2012, 2013, 2015, 2017a, 2017b, 2018).

10.1 Adult 1: male; Adult 2: male; Adult 3: female; Adult 4: female; Adult 5: female; Adult 6: male; Adult 7: female; Adolescent 1: male; Adolescent 2: female; Adolescent 3: male; Juvenile 1: male; Juvenile 2: male.

10.2 Adult 1; Adult 2; Adult 3; Adult 4; Adult 5; Adult 6; Adult 7; Adolescent 1: 12 years; Adolescent 2: 12-13 years; Adolescent 3: 12-13 years; Juvenile 1: 7-8 years; Juvenile 2; Infant 1: 2-3 years (based on dental eruption and histology).

10.3 Several teeth, femur, tibia, humerus, ulna, ribs, vertebrae, tarsus and metatarsus, carpus and metacarpus, hyoid bone, skull fragments. All of the skeletal parts are represented in the sample and some of the remains are in anatomical connection. The assemblage also comprises all bones of the wrist, including adult scaphoids (n = 6), lunates (n = 2), triquetra (n = 4), pisiforms (n = 2), trapezia (n = 2), trapezoids (n = 5), capitates (n = 5), and hamates (n = 2), as well as one fragmentary and possibly juvenile scaphoid. Over 2500 skeletal elements from at least 13 individuals. Teeth are the most represented specimens, followed by humerus and femurs (Bastir et al., 2015, 2017; Belcastro et al., 2020; Estalrrich and Rosas, 2015; Estalrrich et al., 2017; Kivell et al., 2018; Lalueza-Fox et al., 2012; Pérez-Criado and Rosas, 2017; Prieto et al., 2001; Ríos, et al., 2019; Rosas and Aguirre, 1999; Rosas et al., 2005, 2006, 2008, 2012, 2013, 2015, 2017a, 2017b, 2018).

10.4 Adult 1: LI^1, LI^2, LC^1, LP^3, LP^4, LM^1, LM^2, LM^3, RI^1, RI^2, RC^1, RP^3, RM^2, LI_2, LC_1, LP_3, LP_4, LM_1, LM_2, LM_3, RI_1, RI_2, RC_1, RP_3, RP_4, RM_1, RM_2, RM_3; Adult 2: LI^1, LI^2, LC^1, LP^3, LP^4, LM^1, LM^2, LM^3, RI^1, RI^2, RC^1, RP^3, RP^4, RM^1, RM^2, RM^3, LI_2, LC_1, LP_3, LP_4, LM_1, LM_2, LM_3, RI_1, RI_2; Adult 3: LI^2, LC^1, LP^3, LP^4, LM^1, LM^2, LM^3, RI^2, RC^1, RP^3, RP^4, RM^1, RM^2, RM^3, LP_3, LP_4, LM_1, LM_2, LM_3, RI_1, RI_2, RP_3, RP_4, RM_1; Adult 4: LI^1, LC^1, LP^3, LM^1, LM^2, RC^1, RP^3, RP^4, RM^1, RM^2, RM^3, LI_1, LI_2, LC_1, LP_3, LP_4, LM_1, LM_2, RI_1, RI_2, RC_1, RP_3, RP_4, RM_3; Adult 5: LI^1, LI^2, LC^1, LP^3, LP^4, LM^1, LM^2, LM^3, RI^1, RI^2, RC^1, RP^3, RP^4, RM^1, RM^2, RM^3, LI_1, LI_2, LC_1, LP_3, LP_4, LM_1, LM_2, RI_1, RI_2; Adult 6: LI^1, LC^1, LP^4, LM^1, RP^3, RP^4, RM^1, RM^2, RM^3, LI_2, LC_1, LP_3, LP_4, LM_1, LM_3, RM_2; Adult 7: LP^3, LM^1, RI^1, RI^2, RM^3, LM_1, LM_2, RI_1, RM_1, RM_3; Adolescent 1: LC^1, LP^3, LP^4, LM^1, RC^1, RP^4, LM_1, RI_1, RI_2, RP_4, RM_2; Adolescent 2: LI^1, LP^4, LM^1, LM^3 (unerupted), RI^1, RI^2, RP^3, RP^4, RM^1, RM^2, RM^3 (unerupted), LM_1, LM_2, LM_3 (unerupted), RI_2, RM_1; Adolescent 3: LI^1, LI^2, LC^1, LP^3, LP^4, LM^1, LM^3 (unerupted), RM^3 (unerupted), LC_1, LP_3, LP_4, RP_3; Juvenile 1: LI^2; LC^1; LM^1; LM^2; RdC^1; RdM^2; RI^1; RI^2; RP^3; RP^4; RM^1; LdI_2; LdC_1; LdM_1; LdM_2; LI_1; LI_2; LC_1; LP_3; LP_4; LM_1; LM_2; RdC_1; RdM_1; RdM_2; RI_1; RI_2; RC_1; RP_3; RP_4; RM_1; RM_2 (Rosas et al., 2013).

10.5 Seventeen congenital anomalies have been observed within the El Sidrón Neandertal family group (Ríos et al., 2019): narrowing of the internal nasal fossa (Adult 2); Retained mandibular deciduous canine (Adult 2 and Adolescent 3); C1 anterior cleft (SD-636; SD-1094); C1 posterior cleft (SD-1643; and Juvenil 1); C2 bilateral asymmetry (SD-1601); T12 posterior cleft (SD-437); T12 hypoplastic rib/lumbar rib (SD-292); scaphoid os centrale (SDR-064; SD-258; SD-679b) / bipartite (SD-96); tripartite patella (SD-932); foot congenital anomaly (left fully mature foot composed of *in situ* articulated bones included in a sediment block SD-437); navicular-cuboid non-osseous coalition (SD-2000). All individuals have dental calculus (Rosas et al., 2006; Hardy et al., 2012); El Sidrón 1 may have been self-medicating a dental abscess (Hardy et al., 2012). El

Sidrón 1: several oral pathogens (species with dental caries and periodontal disease; Weyrich et al., 2017). All the individuals from El Sidrón present dental hypoplasia (Rosas et al., 2006). Adults and adolescents all show interproximal grooves derived from high levels of masticatory stress (Rosas et al., 2006). Two specimens (adult 2 Neandertal hemi-mandible SDR-007-008, and of teeth and the mandibular fragment of the adolescent 3) retained deciduous canines and unerupted permanent canines associated with dentigerous cyst and infections (Dean et al., 2013).

11. Department of Paleobiology at the National Museum of Natural History (MNCN-CSIC) in Madrid, Spain; Museo Arqueológico de Asturias, Spain .

12. –

13. –

14.1 Adult 1 (RI^2, SD-441), Adult 2 (RI^2, SD-1240), Adult 3 (Mandibule, SDR-011), Adult 4 (LM_1, SD-331c), Adult 5 (LM_1, SD-1327h), Adult 6 (LC_1, SD-753, RC^1 ,SD-1161), Adult 7 (long bone, SD-1351c) Adolescent 1 (RP_4 ,SD-763a, longe bone SD-1253), Adolescent 2 (RP^3, SD-566), Adolescent 3 (LP_4, SD-500), Juvenile 1 (Femur, SD-1634), Juvenile 2 (Rigth Ulna SD-763b), Infant (Finger bone, SD-634), Sediments from Stratum III.

14.2 Adult 1, Adult 2, Adult 3, Adult 4, Adult 5, Adult 6, Adult 7 Adolescent 1, Adolescent 2, Adolescent 3, Juvenile 1, Juvenile 2, Infant, Stratum III.

14.3 Stored at the Max Planck Institute for Evolutionary Anthropology, Leipzig, Germany.

14.4 ENA: SD1253: PRJEB1762, PRJEB11828, FM865409, ERP000125, oagr.org.au: SD-1427C and SD-1604 for metagenomics data from dental calculus. PRJEB18629 for sediments from Stratum III.

14.5 Adult 1: Mitochondrial DNA, Microbiome, Adult 2: Mitochondrial DNA, Adult 3: Mitochondrial DNA, Adult 4: Mitochondrial DNA, Adult 5: Mitochondrial DNA, Adult 6: Mitochondrial DNA, Microbiome, Adult 7: Mitochondrial DNA, nuclear capture Adolescent 1: Mitochondria DNA, Nuclear capture, Exome capture, chr21 capture. Adolescent 2: Mitochondria DNA, Adolescent 3: Mitochondria DNA, Juvenile 1: Mitochondria DNA, Juvenile 2, Infant: Mitochondria DNA. Sediments from Stratum III: animal and human mtDNA.

14.6 None.

14.7 None.

14.8 Adolescent 1 (0.1-0.01).

14.9 Molecular sex: M (Adult 1), M (Adult 2), F (Adult 3), F, (Adult 4), F (Adult 5), M (Adult 6), M (Adolescent 1), M (Adolescent 2), M (Adolescent 3).

14.10 –

15. No

16. No

17. Bastir, M., et al. (2015), The relevance of the first ribs of the El Sidrón site (Asturias, Spain) for the understanding of the Neandertal thorax. *Journal of Human Evolution* 80, 64-73. P; Bastir, M., et al. (2017), Three-dimensional morphometrics of thoracic vertebrae in Neandertals and the fossil evidence from El Sidrón (Asturias, Northern Spain*). Journal of Human Evolution* 108, 47-61. P; Belcastro M.G., et al. (2020), The study of the lower limb entheses in the Neanderthal sample from El Sidrón (Asturias, Spain): How much musculoskeletal variability did Neanderthals accumulate? *Journal of Human Evolution* 141, 102746. P; Cañaveras, J.C., et al. (2011), El modelo de relleno, o cómo llegaron los restos a la Galería del Osario, En: Rasilla, M. de la, Rosas, A., Cañaveras, J. C., Lalueza-Fox, C. (Eds.), *La Cueva de El Sidrón (Borines, Piloña, Asturias). Investigación interdisciplinar de un grupo neandertal*, Consejería de Cultura y Turismo y Ediciones Trabe SLU, Oviedo, 43-63. A, P; Dean, M.C., et al. (2013), Longstanding dental pathology in Neandertals from El Sidrón (Asturias, Spain) with a probable familial basis. *Journal of Human Evolution* 64(6), 678-686. P; De la Rasilla, M., et al. (2013), La cueva de El Sidrón (Piloña). Campañas de excavación e investigación 2007-2012. *Excavaciones Arqueologías en Asturias 2007-2012*, 69-86. A; De la Rasilla, M. de la, et al. (2011), *La Cueva de El Sidrón (Borines, Piloña, Asturias). Investigación interdisciplinar de un grupo neandertal*, Consejería de Cultura y Turismo, Gobierno del Principado de Asturias y Ediciones Trabe SLU, Oviedo. A., P; De Torres, T., et al. (2010), Dating of the Hominid (*Homo neanderthalensis*) remains accumulation from El Sidrón (Pilona, Asturias, North Spain): An example of a multi-methodological approach to the dating of upper Pleistocene sites. *Archaeometry* 52, 680-705. D, P; Estalrrich, A., Rosas, A. (2015), Division of labor by sex and age in Neandertals: an approach through the study of activity-related dental wear. *Journal of Human Evolution* 80, 51-63. A., P; Estalrrich, A., et al. (2017), Evidence of toothpick groove formation in Neandertal anterior and posterior teeth. *American Journal of Physical Anthropology* 162, 747-756. P, A: Fortea, J., et al. (2003), La Cueva de El Sidrón (Borines, Piloña, Asturias): Primeros resultados. Estudios Geológicos 59, 159-179. A, D; Fortea, F.J., et al. (2007), La Cueva de El Sidrón (Borines, Piloña, Asturias). Campañas arqueológicas de 2000 a 2002, *Excavaciones Arqueológicas en Asturias 1999 – 2002* 5, 191-205. A., P; Fortea, F.J., et al. (2009), La Cueva de El Sidrón (Borines, Piloña, Asturias). Campañas arqueológicas de 2003 a 2006, *Excavaciones Arqueológicas en Asturias 2003-2006* 6, 367-384. A., P; Kivell, T.L., et al. (2018), New Neandertal wrist bones from El Sidrón, Spain (1994 – 2009). *Journal of Human Evolution* 114, 45-75. P; Hardy, K., et al. (2012), Neanderthal medics? Evidence for food, cooking, and medicinal plants entrapped in dental calculus. *Naturwissenschaften* 99, 617–626. A., P; Lalueza-Fox, C., et al. (2005), Neandertal Evolutionary Genetics: Mitochondrial DNA Data from the Iberian Peninsula. *Molecular Biology and Evolution 22*(4), 1077-1081. G, D; Lalueza-Fox, C., et al. (2010), Genetic evidence for patrilocal mating behavior among Neandertal groups. *PNAS* 108(1), 250-253. P, G; Lalueza-Fox, C., et al. (2012), Palaeogenetic research at the El Sidrón Neanderthal site. *Annals of Anatomy – Anatomischer Anzeiger* 194, 133-137. P, G; Pérez-Criado, L., Rosas, A. (2017), Evolutionary anatomy of the Neandertal ulna and radius in the light of the new El Sidrón sample*. Journal of Human Evolution* 106, 38-53. P; Prieto, J.L., et al. (2001), Hallazgos Antropológicos y Arqueológicos en el Complejo Kárstico de El Sidrón (Vallobal, Infiesto, Concejo de Piloña, Asturias). *Munibe* 53, 19-29. A, P; Rosas, A., Aguirre, E. (1999), Restos humanos neandertales de la cueva del Sidrón, Piloña, Asturias. Nota preliminar. *Estudios Geológicos* 55, 181-190. P; Rosas, A., et al. (2005), Restos neandertales de la Cueva de El Sidrón: una restauración al servicio de la investigación paleontológica. *Boletín del Instituto Andaluz del Patrimonio Histórico* 53, 70-73. P; Rosas, A., et al. (2006), Paleobiology and comparative morphology of a late Neandertal sample from El Sidrón, Asturias, Spain. *PNAS* 103, 19266-19271. P., A; Rosas, A., et al. (2008), Endocranial occipito-temporal anatomy of the SD-1219 fossil from the El Sidrón Neandertals.

The Anatomical Record 291(5), 501-512. P; Rosas, A., et al. (2012), The Neandertals from El Sidrón (Asturias, Spain). Updating of a new sample. *Anthropologie* 116, 57-76. P., A; Rosas, A., et al. (2013), Identification of Neandertal individuals in fragmentary fossil assemblages by means of tooth associations: The case of El Sidrón (Asturias, Spain). *Comptes Rendus Palevol* 12, 279-291. P; Rosas, A., et al. (2015), A geometric morphometrics comparative analysis of Neandertal humeri (epiphyses-fused) from the El Sidrón cave site (Asturias, Spain). *Journal of Human Evolution* 82, 51-66. P; Rosas, A., et al. (2017a), The growth pattern of Neandertals, reconstructed from a juvenile skeleton from El Sidrón (Spain). *Science* 357, 1282-1287. P., A; Rosas, A., et al. (2017b), Neandertal talus bones from El Sidrón site (Asturias, Spain): A 3D geometric morphometric analysis. *American Journal of Physical Anthropology* 164, 394-415. P; Rosas, A., et al. (2018), Response to Comment on "The growth pattern of Neandertals, reconstructed from a juvenile skeleton from El Sidrón (Spain)". *Science* 359, 3820. P; Ríos, L., et al. (2019), Skeletal anomalies in the Neandertal family of El Sidrón (Spain) support a role of inbreeding in Neandertal extinction. *Scientific Reports* 9, 1697. P., A; Santamaría, D., et al. (2010), The technological and typological behaviour of a neanderthal group from El Sidrón cave (Asturias, Spain). *Oxford Journal of Archaeology* 29, 119-148. A., P; Sesé, C., et al. (2018), Los micromamíferos (Eulipotyphla, Chiroptera, Rodentia y Lagomorpha) del yacimiento del Pleistoceno Superior de la cueva de El Sidrón (Asturias*). Estudios Geológico*s 74. A., E; Slon, V., et al. (2017), Neandertal and Denisovan DNA from Pleistocene sediments. *Science* 356, 605-608. G., P., A; Weyrich, L.S. (2017), Neanderthal behaviour, diet, and disease inferred from ancient DNA in dental calculus. *Nature* 544, 357-361. G, P, A; Wood, R.E., et al. (2013), A new date of the Neanderthals from El Sidrón Cave (Asturias, Northern Spain), *Archaeometry* 55 (1), 148-158. D

Code data collected by: Giulia Marciani, Erica Piccirilli, Marco Peresani, Stefano Benazzi

1. **FATE**, Caverna delle Fate, Buca delle Fate

2. Manie Plateau, left flank of the Valle di Ponci, 280 m asl, 4 km north-east of Finale Ligure (Savona, Liguria, Italy); 44°11'45" N, 8°22'03" E.

3. G.B. Amerano 1887 – 1888 (collected the bone assemblage); G. Giacobini 1981 (discovery of Fate 1-3 in the Amerano assemblage); Soprintendenza Archeologica della Liguria 1983 – 1988 (excavation, Fate 4-16).excavations.

4. Disturbed cave deposit (Echassoux et al., 1989).

5. No

6. All hominid remains were collected in sediments disturbed by ancient excavations.

7.1 Typical Mousterian (de Lumley, 1969; Echassoux et al., 1989; Palma di Cesnola 2001).

7.2 Few Levallois flake production.

7.3 No

7.4 No

7.5 No

7.6 No

7.7 No

8.1 Large mammals (de Lumley, 1969; Echassoux et al., 1989).

8.2 No

9.1 Human remains Fate 1-3, non destructive gamma ray spectrometry, 75 +21/-14 ka (231Pa/235 U); 82 +36/-25 (230 Th/234 U) (Giacobini et al., 1984).

9.2 Stalagmitic levels, ESR, 78 ± 9 ka and 78 ± 13 ka (Echassoux et al., 1989).

9.3 Early Würm based on faunal evidence (de Lumley, 1969; Echassoux et al., 1989).

10. Fate 1-16.

10.1 –

10.2 Fate 1: juvenile, 8-10 years (morphology and dimensions); Fate 2: juvenile, 9-10 years (morphology, dimensions, dental eruption); Fate 3: adult (morphology, dimensions, dental eruption); Fate 4: adult (morphology and dimensions); Fate 5: juvenile, 4-5 years (dental eruption); Fate 6: adult (dental maturation and wear); Fate 7: adult (dental maturation and wear); Fate 8: adult (dental maturation and wear); Fate 9: adult (dental maturation and wear); Fate 10: adult (morphology and dimensions); Fate 11: adult (dental maturation and wear); Fate 12: adult (dental maturation and wear); Fate 13: adult (dental maturation and wear); Fate 14: juvenile, 4-7 years (dental eruption); Fate 15: adult (dental maturation and wear); Fate 16: juvenile, 8-10 years (morphology and dimensions).

10.3 Fate 1: incomplete frontal bone (d); Fate 2: incomplete mandible (f); Fate 3: incomplete mandible (ff); Fate 4: fragment of the occipital squama (d); Fate 10: hand phalanx (V?); Fate 16: incomplete right zygomatic bone (d).

10.4 Fate 3: RM_3; Fate 5: LdM_2; Fate 6: RM_1; Fate 7: RP^3; Fate 8: LP^3; Fate 9: M (maxillary, ff); Fate 11: LI^2?; Fate 12: LM_2; Fate 13: RM^1; Fate 14: LdM^1; Fate 15: RI_2.

10.5 –

11. Dipartimento di Anatomia, Farmacologia e Medicina Legale, Università di Torino, Corso M. d'Azeglio 52, 10126 Torino, Italy.

12. Dipartimento di Anatomia, Farmacologia e Medicina Legale, Università di Torino, Corso M. d'Azeglio 52, 10126 Torino, Italy.

13. –

14.1 –

14.2 –

14.3 –

14.4 –

14.5 –

14.6 –

14.7 –

14.8 –

14.9 –

14.10 –

15. No

16. No

17. Echassoux, A., et al. (1989), Les nouvelles fouilles dans le gisement mousterien de la Caverna delle Fate (Finale, Ligurie Italienne). In M. Otte (ed.), *L'Homme de Néandertal*, vol. 6: La Subsistance. Liège: ERAUL, 49-58. A; Giacobini, G. (1992), New discoveries of Palaeolithic human remains in Italy. In M. Toussaint (ed.), *Five Million Years, the Human Adventure*. Liège: ERAUL, 199-205. P; Giacobini, G., de Lumley, M.-A. (1984), Les Néandertaliens de la Caverna delle Fate (Finale, Ligurie Italienne). *Comptes Rendus de l'Académie des Sciences de Paris*, Serie 2, 298(4): 712-715. P; Giacobini, G., de Lumley, M.-A. (1988), Les fossiles humains de la Caverna delle Fate (Finale, Ligurie Italienne) et la définition des caractères Néandertaliens au début du Würm. In M. Otte (ed.), *L'Homme de Néandertal*, vol. 3: L'Anatomie. Liège: ERAUL, 53-65. P; Giacobini, G., et al. (1984), Neanderthal child and adult remains from a Mousterian deposit in Northern Italy (Caverna delle Fate, Finale Ligure). *Journal of Human Evolution* 13: 687-707. P; de Lumley, H. (1969), Le Paléolithique inférieur et moyen du Midi méditerranéen dans son cadre géologique. *Gallia Préhistoire*, suppl. 5: 14-19. A; Palma di Cesnola, A. (2001), Il Paleolitico inferiore e medio in Italia. ed. Millenni. A

Code data collected by: Carolin Röding, Andrew Kandel, Michael Bolus, Dustin Welper, Mateja Hajdinjak

1. **FELDHOFER GROTTE**, kleine Feldhofer Grotte; Feldhofer Cave; Neandertal; Neander Valley

2. Nordrhein-Westfalen, Germany; 51°13'37" N, 6°56'42" E.

3. August 1856 found during the works in the limestone quarry, recognized as human by J.C. Fuhlrott. (Neandertal 1: calotte + 15 postcranial remains), 62 new fragments (some could be refitted) discovered by excavation teams in 1997 & 2000 in the back dirt from 1856.

4. Cave deposits.

5. Unclear for all human remains.

6. No stratigraphic information; cave emptied to avoid contamination of limestone during quarrying.

7.1 Micoquian.

7.2 Bificial.

7.3 Yes – bone retouchers (n=4, Schmitz et al. 2002, one might date do the Aurignacian).

7.4 No

7.5 No

7.6 No

7.7 Combustion feature, unclear.

8.1 Large Mammals, small mammals.

8.2 No

9.1 Yes, calibrated ca. 40 ka, for both individuals. ETH-19960/NN1 (human bone, individual 2), C14, 39.24 ± 0.67 ka; ETH-19661/NN14 (human bone, unknown individual), C14, 40.36 ± 0.76 ka; ETH-20981/Neandertal 1 (human bone, individual 1), C14, 39.9 ± 0.62 ka (Schmitz et al. 2002 for all).

9.2 No

9.3 Late Pleistocene according to fauna.

10. *only the new 62 fragments from 1997-2000 have individual ID numbers while the finds from 1856 are all summarized as Neandertal 1. MNI: 3. Neandertal 1; Nean 1; Neanderthal 1; Feldhofer 1 (several fragments without numbers from 1856 + fragments from 1997 – 2000: NN13, NN34, NN35). Neandertal 2; Feldhofer 2 (several fragments from 1997 – 2000 that are clearly not Neandertal 1 and might belong together: NN1, NN2, NN3, NN24, NN47). Neandertal 3: NN50. Additional fragments from 1997-2000: NN4, NN5, NN6, NN7, NN8, NN9, NN10, NN11, NN12, NN14, NN15, NN16, NN17, NN18, NN19, NN20, NN21, NN22, NN23, NN25, NN26, NN27, NN28, NN29, NN30, NN31, NN32, NN33, NN36, NN37, NN38, NN39, NN40, NN41, NN42, NN43, NN44, NN45, NN46, NN48, NN49, NN51, NN52, NN53, NN55, NN56, NN57, NN58, NN59, NN60, NN61, NN64 (some might belong to Neandertal 1 as these fragments are missing in Neandertal 1 but not certain, also not certain if the same individual as Neandertal 2). Additional fragments from proteomics: 18 fragments originally addressed as fauna due to ff preservation state (F-2, F-3, F-4, F-6, F-15, F-25, F-26, F-34, F-38, F-40, F-42, F-51, F-53, F-54, F-55, F-63, F-72, F-76).

10.1 Neandertal 1: male (ilium, cranium).

10.2 NN50: around 11-14 years old (dental wear and root absorption in deciduous tooth). Fragments belonging to Neandertal 1: adult 30-50 years (overall size, epiphysial fusion, cranial vault thickness & cranial sutures). Additional fragments not belonging to Neandertal 1: adult (overall size, epiphysial fusion, etc. but not really listed in the text).

10.3 Neandertal 1: cranium (f) (+ NN34, NN35), 5 rib fragments (ff), R scapula (f), R clavicular (f), R humerus (i), L humerus (f), R radius (d), L ulna (i), R ulna (f), L ilium (f), R femur (d), L femur (d) (+ NN13), + maybe NN14 (R iscium (ff)). Neandertal 2: R humerus (NN1, 2, 3, 47 and maybe NN 24) (ff). Remains not associated with a specific individual: NN 4+23: R tibia (ff); NN 5 + 48: R tibia (ff); NN 6: L(?) humerus (ff); NN 7: cervical vertebrae (probably C6) (ff); NN 8+12: R(?) rib (ff); NN 9, 10, 11: ribs (ff), NN 12: R(?) rib (ff); NN 15: L sacrum fragment (ff); NN 17: cervical vertebrae (probably C1) (f); NN 18: cervical vertebrae (probably C3-C6) (f); NN 19: R sphenoid (f); NN 20: R metacarpal ray II (f); NN 21: L capitate (f); NN 22: L capitate (f); NN 25: R(?) tibia (ff); NN 26+27: cervical vertebrae (probably C5-C7) (f); NN 28: L(?) metacarpal ray II or III (f); NN 29: R(?) distal phalanx carpal, ray II (?) (f); NN 30: L proximal phalanx carpal (f); NN 32: L 1st proximal phalanx carpal (f); NN 36: R(?) acetabular fossa (ff); NN 37: L lunate (i); NN 38: R(?) calcaneus(?) (f); NN 39: R(?) rib (ff); NN 40: R occipital bone (f); NN 41: proximal ulna (human?) (ff); NN 42+43+44(?)+45(?)+46+59: R ulna (ff); NN 49: rib (ff); NN 52: mandible (basal portion of symphysis) (ff); NN 53: bone splinter, unknown element (ff); NN 56: sphenoid (ff); NN 57: L intermediate phalanx carpal, ray II(?) (f); NN 58: L(?) metacarpal ray IV (f); NN 60: L ulna (ff); NN 61: L mandible (fragment around condylar neck) (ff); NN 64: L 2nd rib (f).

10.4 Neandertal 3: RdM^2 (NN 50). Dental remains not associated with a specific individual: NN 16: LM^1 or LM^2; NN 30: RM^2; NN 33: M^3; NN 51: RP_4; NN 55: LI_1.

10.5 Neandertal 1: Potential healed fracture left humerus close to the elbow joint and potential healed trauma on frontal bone.

11. LVR-LandesMuseum Bonn, Colmantstraße 14-16, 53115 Bonn, Germany; Stiftung Neanderthal Museum, Talstraße 300, 40822 Mettmann, Germany.

12. Stiftung Neanderthal Museum, Talstraße 300, 40822 Mettmann (for cast of Neanderthals and other hominins. See Digital Archive!) From Neanderthal 1 there are 4 casts.

13. NM digital archive (CT scans or 3D models for the majority of the human remains).

14.1 Bone: Individual 2 (Feld 2, NN1, right humeral shaft); Individual 1 (Feld 1, fragment without an ID).

14.2 Feld 2/NN1, Feld 1.

14.3 Stored at the Max Planck Institute for Evolutionary Anthropology, Leipzig, Germany.

14.4 GenBank: AF011222, AY149291; mtDNA: FM865407, FM65408.

14.5 mtDNA, shallow shotgun.

14.6 None

14.7 0-0.5X

14.8 Not applicable

14.9 Feld 1: male, Feld 2: female.

14.10 –

15. Yes – $^{13}C/^{12}C$, $^{15}N/^{14}N$ (Richards, Schmitz 2008).

16. Yes (Lanigan et al. 2020).

17. Schmitz, R.W. et al. (2002), The Neandertal type site revisited: interdisciplinary investigations of skeletal remains from the Neander Valley, Germany. *Proceedings of the National Academy of Sciences of the United States of America* 99, 13342-13347. D, G, P, A, Z; Fuhlrott, J. C. (1857), Sitzungsberichte der Niederrheinischen Gesellschaft für Natur- und Heilkinde zu Bonn. *Verh. naturhist. Ver. preuss. Rheinl.* 14, Corr. Bl., 50. P; Schaaffhausen, H. (1857), Sitzungsberichte der Niederrheinischen Gesellschaft für Natur- und Heilkinde zu Bonn. *Verh. naturhist. Ver. preuss. Rheinl*. 14, Corr. Bl., 38-42. P; Schmitz, R.W., Thissen, J. (2000), First archaeological finds and new human remains at the rediscovered site of the Neanderthal type specimen. A preliminary report. In: Orschiedt, J., Weniger, G.-C. (Eds.), *Neanderthals and Modern Humans – Discussing the transition: Central and Eastern Europe from 50,000-30,000 B.P*. Wissenschaftliche Schrif- ten des Neanderthal Museums 2. Neanderthal Museum Mettmann, 267-274. A, P; Krings, M., et al. (1997), Neandertal DNA sequences and the origin of modern humans, *Cell* 90, 19-30. G; Schultz, M. (2006), Results of the anatomical-palaeopathological investigations on the Neanderthal skeleton from the Kleine Feldhofer Grotte (1856) including the new discoveries from 1997/2000. In: *Rheinische Ausgrabungen*. Band 58, 277-318. P; King, W. (1864), The Reputed Fossil Man of the Neanderthal. *Quarterly Journal of Science*. Band 1, 88-97. P; Schmitz, R. W. (2006). *Neanderthal 1856-2006*. Mainz am Rhein: Verlag Philipp von Zabern. P, A, Z, D, G, R; Richards, M. P., & Schmitz, R. W. (2008). Isotope evidence for the diet of the Neanderthal type specimen. *Antiquity* 82(317), 553-559. S; Lanigan, L.T. et al. (2020), Multi-protease analysis of Pleistocene bone proteomes. *Journal of proteomics* 228, p.103889. Prot; Schaefer, U. (1957), Homo neanderthalensis (King): I. Das Skelett aus dem Neandertal. *Zeitschrift für Morphologie und Anthropologie* 48, 268-297. P

Code data collected by: Giulia Marciani, Erica Piccirilli, Marco Peresani, Stefano Benazzi

1. **FONDO CATTIE**, Maglie
2. 2 km west of Maglie (Lecce, Puglia, Italy); 40°12'45" N, 18°16'20" E.
3. P. F. Liguori 1980.
4. Filling of a huge dolina (Cremonesi et al., 1984).
5. No
6. No
7.1 Mousterian (Cremonesi et al., 1984).
7.2 Quina (Cremonesi et al., 1984).
7.3 No
7.4 No
7.5 No
7.6 No
7.7 No
8.1 Large mammals (Borgognini Tarli, 1983), study ongoing.
8.2 No
9.1 –
9.2 –
9.3 Upper Pleistocene based on stratigraphic and faunal evidence (Cremonesi et al., 1984).
10. Maglie 1.
10.1 –
10.2 Maglie 1: adult (dental maturation and wear).
10.3 –
10.4 Maglie 1: RM_3.
10.5 –
11. Museo Civico di Paleontologia e Paletnologia Decio de Lorentiis, Via Vittorio Emanuele 117, 73024 Maglie (Lecce), Italy.
12. –
13. –
14.1 –
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No

17. Borgognini Tarli S. (1983), A Neanderthal lower molar from Fondo Cattie (Maglie, Lecce). *Journal of Human Evolution* 12: 383-401. P; Cremonesi, G., et al. (1984), Nota preliminare sull'industria musteriana proveniente dal deposito di Cattie (Maglie). *Quaderni Museo Paleontologico di Maglie,* 2: 5-26. A

Code data collected by: Giulia Marciani, Erica Piccirilli, Marco Peresani, Stefano Benazzi

1. **FOSSELLONE**, Antro Obermaier, B Cave
2. Along the coastal profile of Monte Circeo, 1 km SW of the village of San Felice Circeo (Latina, Italy); 41°14' N, 13°05' E.
3. A.C. Blanc, April, 1953 (M1 and M2), October, 1954 (mandibular fragment and P4) (Blanc, 1954).
4. Cave deposits (Mallegni 1992b).
5. No
6. Level 4, Antro Obermaier sequence (Mallegni 1992b).
7.1 Mousterian (Blanc, 1954; Vitagliano e Piperno, 1991).
7.2 Pontinian, low Levallois, presence of quina, exploitation of local raw material characterized by small rounded pebbles (Blanc, 1954; Vitagliano e Piperno, 1991).
7.3 No
7.4 No
7.5 No
7.6 No
7.7 No
8.1 Large mammals (Blanc, 1954).
8.2 –
9.1 –
9.2 –
9.3 Late Würm I – Early Würm II based on stratigraphic and faunal evidence (Sergi et al., 1971).
10. Fossellone 3.
10.1 –
10.2 Juvenile, around 10 years (morphology and dimensions).
10.3 Fragment of mandibular symphyseal region (f).
10.4 LP_4, LM_1, LM_2.
10.5 –
11. Istituto Italiano di Paleontologia Umana, presso il Convitto Nazionale Regina Margherita, in Piazza R. Bonghi 2, Anagni, Italy.
12. –
13. –
14.1 –
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No

16. No
17. Bietti, A., Manzi, G. (1991), Proposal for a new denomination of the Monte Circeo hominids. In A. Bietti G. Manzi (eds), *The Fossil Man of Monte Circeo. Fifty Years of Studies on the Neandertals in Latium*, 47-48. Quaternaria Nova, 1 (Proceedings of the homonymous symposium; Sabaudia, October 1989). P; Blanc, A.C. (1954), Reperti fossili neandertaliani nella Grotta del Fossellone al Monte Circeo: Circeo IV. *Quaternaria*, 1: 171-175. P; Mallegni, F. (1992a), Human remains (Fossellone 3; ex Circeo 4) referable to Homo s. neanderthalensis from Fossellone Cave (Monte Circeo, Latium, Italy). *Rivista di Antropologia*, 70: 217-227. P; Mallegni, F. (1992b), Quelques restes humains immatures des niveaux musteriens de la Grotte du Fossellone (Monte Circeo, Italie): Fossellone 3 (olim Circeo IV). *Bulletin et Mémoires de la Société d'Anthropologie de Paris*, 4 (n.s.): 21-32. P; Sergi et al. (1971), Italy. In K.P. Oakley, B.G. Campbell & T.I. Molleson (Eds), *Catalogue of Fossil Hominids*. Part II: Europe, 231-260. London: British Museum (Natural History). P; Vitagliano, S., Piperno, M. (1991), Lithic industry of level 27 beta of the Fossellone Cave (S. Felice Circeo, Latina). *Quaternaria Nova*, 1: 289-304. A
18. The denomination "Fossellone 3" is in accordance with the proposal reported by Bietti e Manzi (1991), while the specimen was previously referred to as Circeo IV or Circeo 4. Fossellone 1 and 2 are specimens from the same site referred to Aurignacian levels (Upper Paleolithic Homo sapiens).

Code data collected by: Giulia Marciani, Erica Piccirilli, Marco Peresani, Stefano Benazzi

1. **FUMANE**, Grotta di Fumane, Riparo Solinas, Stazine della Neve
2. Near the village of Fumane (Valpolicella, Verona, Italy), 350 m asl on the left flank of the Vaio di Manune; 45°35' N, 10°54' E.
3. A. Broglio and M. Cremaschi 1989 – 1997 (excavations; Fumane 1, 1989; Fumane 2, 1990; Fumane 3, 1991, later reassigned as animal); M.Peresani 1996 – present (Fumane 4, 2010; Fumane 5, 2011).
4. Cave deposit.
5. No
6. Fumane 1: unit A11, square 63 (Peresani et al., 2008; Higham et al., 2009; Benazzi et al., 2014); Fumane 4 and 5: unit A9 (level A9l-square 98f, and level A9- square 97 g, respectively); Fumane 6 (a small tooth fragment): layer A3l.

7.1 Mousterian (Peresani, 2022).
7.2 No
7.3 No
7.4 No
7.5 No
7.6 No
7.7 No
8.1 Large mammals, small mammals (Bartolomei et al., 1992).
8.2 Units A11-A10: Pinus sylvestris/mugo (López-García et al., 2015 and cites therein).
9.1 –
9.2 –
9.3 –

10. Fumane 1.

10.1 –
10.2 Juvenile, 9-12 years (root resorption and wear stage).
10.3 –
10.4 Fumane 1: LdM_2) (Benazzi et al. 2014).
10.5 –

11. Dipartimento di Scienze Geologiche e Paleontologiche, Università di Ferrara, C.so Ercole I d'Este 32, 44100 Ferrara, Italy.
12. Dipartimento di Studi Umanistici, Università di Ferrara, C.so Ercole I d'Este 32, 44100 Ferrara, Italy
13. –

14.1 Tooth calculus
14.2 FUM003.A and FUM002.A
14.3 Stored at the Max Planck Institute for Evolutionary Anthropology, Leipzig, Germany.
14.4 ERS3774434 and ERS3774443
14.5 Oral microbiome
14.6 None.
14.7 0-0.5X
14.8 –
14.9 –

14.10 –

15. No
16. No
17. Peresani M., 2022, Inspecting human evolution from a cave. Late Neanderthals and early sapiens at Grotta di Fumane: present state and outlook. *Journal of Anthropological Sciences* 100: 71-107. doi.org/10.4436/JASS.10016. A, Z, P; Bartolomei G. et al. (1992), La Grotte de Fumane. Un site aurignacien au pied des Alpes. *Preistoria Alpina* 28: 131-179. A; Giacobini G. (1992), New discoveries of Palaeolithic human remains in Italy. In M. Toussaint (ed.), *Five Million Years, the Human Adventure*. Liège: ERAUL. 199-205. P; Benazzi, S. et al. (2014), Middle Paleolithic and Uluzzian human remains from Fumane cave, Italy. *Journal of Human Evolution* 70, 61-68. P; López-García, J. M. et al. (2015), Reconstruction of the Neanderthal and Modern Human landscape and climate from the Fumane cave sequence (Verona, Italy) using small-mammal assemblages. *Quaternary Science Reviews*, 128, 1-13. E
18. Fumane 2 was discovered in the Proto-Aurignacian deposit. Fumane 3, labial half of an incisor was discovered, initially considered human, proved to be a lower incisor of *Ursus* sp. Fumane 4, Rdi1, the taxonomic attribution is difficult due to heavy incisal wear. The permanent molar fragment Fumane 6 does not give any useful information for taxonomic discrimination

Code data collected by: Florent Rivals, Francesca Romagnoli

1. **GABASA**, Cueva de los Moros-1 de Gabasa
2. Spain; 42°0’ N, 0°25’ E.
3. M. Badía 1982.
4. Cave deposits.
5. No
6. Level f.
7.1 Mousterian.
7.2 Discoid with some Levallois and Quina.
7.3 No
7.4 No
7.5 No
7.6 No
7.7 Hearths (but rare).
8.1 Large mammal, small mammals.
8.2 Herbaceous, shrubs/tree.
9.1 No
9.2 Radiocarbon, OxA-5674: >51.900 B.P. (Level f).
9.3 –
10. No ID numbers available, 3 bone fragments and 3 isolated teeth.
10.1 –
10.2 Juvenile (P^3 with root in formation); Adults (RM^1; RM^2; R clavicle; R metatarsal; L foot phalanx).
10.3 R clavicle; R metatarsal; L foot phalanx.
10.4 P^3, RM^1, RM^2.
10.5 Hypoplasia (P^3); tooth picking (RM^1).
11. N/A
12. –
13. –
14.1 –
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. Yes – Zinc (Zn), strontium (Sr), carbon (C), and oxygen (O) isotopes and trace elements (Jaouen et al. 2022).
16. No
17. Azanza, B., et al. (1988), Cronoestitagrafía de la Cueva de los Moros (Gabasa, Huesca). *Cuaternario y Geomorfologia* 2 (1-4). A; Blasco, M.F. (1997), In the pursuit of game: The Mousterian cave site of Gabasa 1 in the Spanish Pyrenees. *Journal of Anthropological Research* 53, 177-217. Z; Jaouen K., et al. (2022), A Neandertal dietary conundrum: Insights provided by tooth enamel Zn isotopes from Gabasa, Spain. *PNAS* 119, e2109315119. S; Garralda, M.D. (2005) Los Neandertales en la Península Ibérica. *Munibe* 57, 289-314. P; Lorenzo, J.I., Montes, L. (2001), Restes néandertaliens de la Grotte de “Los Moros de Gabassa” (Huesca, Espagne). In: *Les premiers hommes modernes de la Péninsule Ibérique. Actes du Colloque de la Comission VIII de l’UISPP*. Trabalhos de Arqueologia 17, 77-86, Lisboa. P

Code data collected by: Adrián Nemergut, Ľubomíra Kaminská

1. **GÁNOVCE**, Hrádok
2. Slovakia, Poprad county; 49°1’48” N, 20°19’12” E.
3. J. Petrbok 1924, 1926 (survey); F. Prošek, E. Vlček, V. Ložek et al. 1955 – 1958 (excavations).
4. Travertine mound.
5. No
6. Gánovce 1 – accidental discovery; Gánovce 2 – Complex III, layer 3 – travertine casts (impressions) of gracile left radius and of the left fibula, found in 1955.
7.1 Taubachien.
7.2 Discoid.
7.3 No
7.4 Yes
7.5 Yes (not modified).
7.6 No
7.7 No
8.1 Large mammals, small mammals, birds, molluscs.
8.2 Yes, macro remains (Vlček 1969).
9.1 No
9.2 The endocast was dated to 105 ka (+10.2 ka, -9.4 ka) according to the absolute radiometric dating of the travertine (^{230}Th dating: Jäger 1989).
9.3 Compact, stratified travertine was formed during last interglacial period (Eemien, MIS 5e), Complex III has been dated to the second half of the last interglacial – to the transitional period between developed oak mixed forests and incipient conifers.
10. Gánovce 1: Gánovce 2.
10.1 Gánovce 1: probably un adult female.
10.2 Gánovce 1: probably an adult (based on the *sutura squamosa* obliteration); Gánovce 2: gracile adult or child.
10.3 Gánovce 1 – Travertine skull endocast; Gánovce 2 – Travertine casts (impressions) of gracile left radius and of the left fibula.
10.4 –
10.5 –
11. Národní muzeum, Václavské náměstí 1700/68, 11000 Praha 1, Czech Republic.
12. Podtatranské múzeum, Vajanského 72/4, 058 01, Poprad, Slovak Republic.
13. –
14.1 –
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –

15. No
16. No
17. Vlček, E.(1969), Neandertaler der Tschechoslovakei. Academia Prag. P; Vlček, E. (1971), Czechoslovakia. In: Oakley, K. P., Campbell, B. G., Molleson, T. I. (eds): *Catalogue of fossil Hominids. Part II, Europe*. London, Trustees of the British Museum (Natural History), 47-64. P; Kukla, J. (1999), Předběžné výsledky petrografického výzkumu travertinů na Hrádku v Gánovcích [Preliminary results of the petrographic research of the travertine in Gánovce-Hrádok]; Preliminary report. –MS. (in Czech) (copy in library of Institute of Archaeology of the CAS, Prague, v.v.i. Jelínek, J., Orvanová, E. (1999). Czech and Slovak Republics. Hominid Remains – An Update. *Supplement to Antropologie et Préhistoire* 9, 95-118. P; Hausmann, R.; Brunnacker, K. (1988), U-series Dating of Middle European Travertines. In: Otte, M. (ed.): L´Homme de Néandertal 1, La chronologie. *Actes du colloque International de Liège* (4-7 décembre 1986), ERAUL 28, Liège pp 47-51. P, A,D; Jäger, K.-D. (1989), Aussagen und Probleme radiometrischer Untersuchungen zur Datierung des Travertins von Bilzingsleben (Kreis Artern). *Ethnographisch – Archäologische Zeitschrift* 30, 664-672. P, A, E; Sabol, M. et al. (2017), Revised floral and faunal assemblages from Late Pleistocene deposits of the Gánovce-Hrádok Neanderthal site – biostratigraphic and paleoecological implications. *Fossil Imprint* 73 (1-2), Praha 182-196, P, A, E; Eisová, S., et al. (2019), The Neanderthal endocast from Gánovce (Poprad, Slovak Republic). *Journal of Anthropological Sciences* 97, 1-12. P
18. Gánovce 1 – The cerebral capacity is 1.320 cm^3. From the lateral view, the endocast is markedly low, with a receding forehead and rounded occiput, with typical Neanderthal´s occipital bun. Imprints of gyri and dural venous sinuses, and fragments of same skull bones (temporal, parietal, and frontal ones) are also visible on the endocast surface.

Code data collected by: Jean-Luc Voisin

1. **GENAY**, La Montagne de Cra, La Montagne de Cras

2. Open air site, close to the village of Genay, Côte d'Or, France, 20 km South of Mont bard. There is another village named Genay close to Lyon; 47°31' N, 4°18" E.

3. J. Jolly, 1955.

4. Open air deposits (Silts and breccia).

5. No

6. Layer b (mainly a breccia which is named "Brêche de Genay"); the stratigraphy presented by Joly in 1987 is completely reversed from that of 1955 (in 1955 layer 'a' was on the bedrock, whereas in 1987 it became the most superficial layer).

7.1 Mousterian Quina type.

7.2 Quina.

7.3 No

7.4 No

7.5 Yes, not modified.

7.6 No

7.7 No

8.1 Large and small mammals.

8.2 No

9.1 No

9.2 U-Th, 82 000 +/- 20 000 years old (animal bones, same level as human remains).

9.3 Biostratigraphy (large mammals), MIS 4.

10. Genay 1; Genay 2; Genay 3.

10.1 –

10.2 Genay 1 & 2: adults (teeth morphology); Genay 3: 1,5 to 2,5 years old (tooth growth).

10.3 Genay 1: skull (ff, about 65 fragments) with 3 frontal fragments, 2 left parietal fragments, 6 temporal fragments (3 from the left side and tree from the right side) and 3 occipital fragments.

10.4 Genay 1: LI^1, LI^2, LC', LP^3; LP^4, LM^2, RI^1, RC', RP^3, RP^4, RM^2, RM^3,RI^2; LI_1(f), LI_2, LC_1, LP_3, LP_4, LM_2, LM_3, RI_1, RP_3, RP_4, RM_1, RM_2, RM_3; Genay 2: RI_2 (f); Genay 3: RM_1 (germ).

10.5 Subvertical grooves in the interproximal facets of molars and premolars.

11. Genay 1 & 2: Institut de Paléontologie Humaine, 1 rue René Panhard, 75013, Paris, France. Genay 3: Laboratory, UMR PACEA 5199 – Universite de Bordeaux, Bâtiment B2, Allée Geoffroy Saint-Hilaire CS 50023, 33615 Pessac Cedex, France.

12. –

13. –

14.1 No

14.2 –

14.3 –

14.4 –

14.5 –

14.6 –

14.7 –

14.8 –

14.9 –

14.10 –

15. No

16. No

17. de Lumley M. A. (1976), Les néandertaliens dans le Nord et le centre. In: *La Préhistoire française – Tome I, les civilisations paléolithiques et mésolithiques de la France*, de Lumley H. (Ed.), Edition du CNRS, Paris, 588-596. P; de Lumley M. A. (1987), Les restes humains néandertaliens de la Brèche de Genay, Côte-d'Or, France. *L'Anthropologie (Paris)* 91 (1), 119-162. P, R; Garralda M.D. et al. (2008), La molaire d'enfant néandertalien de Genay (Côte-d'Or, France). Réflexions sur la variabilité dentaire des Néandertaliens, *Paléo* 20, 307-317. https://doi.org/10.4000/paleo.1685. P, R; Gommery D. (2005), Restauration et mise en valeur des restes de Néandertalien de Genay (Côte-d'Or). *Biopréhistoire* 2, 17-21. P; Joly J. (1955), Découvertes de restes néandertaliens en Côte-d›Or. *Comptes Rendus Hebdomadaires des Scéances de l'Académie des Sciences* 240 (2), 2253-2255. A; Joly J. (1987), La Brèche de Genay, Côte-d'Or. *L'Anthropologie (Paris)* 91 (1), 75-86. A; Patou-Mathis M. (1987), La grande faune de la Brèche de Genay (Côte-d'Or). Fouilles de l'Abbé Joly. *L'Anthropologie (Paris)* 91 (1), 97-108. Z, E; Pautrat Y. (1985), Le Moustérien de "Genay" (Côte-d'Or). *Bulletin de la Société préhistorique française*, 82 (5) 138-142. https://doi.org/10.3406/bspf.1985.8677. A; Pautray Y. (1987) L'industrie lithique de la Brèche de Genay. *L'Anthropologie (Paris)* 91 (1), 113-118. A; Villa G., Giacobini G. (1995), Subvertical grooves of interproximal facets in neandertal posterior teeth. *American Journal of Physical Anthropology* 96 (1): 51-62. https://doi-org.inee.bib.cnrs.fr/10.1002/ajpa.1330960106. P; Yokoyama Y. (1987), Datation absolue du site de Genay en Bourgogne, France par les méthodes 230Th/ 234U et 231Pa/235U utilisant la spectrométrie gamma. *L'Anthropologie (Paris)*, 91 (1), 109-112. D

Code data collected by: Jean-Luc Voisin

1. **GROTTE BOCCARD**
2. Close to the village of Créancey, Côte-d'Or, France, 43 km west from Dijon; exact coordinates unknown.
3. Dr. Boccard end of 1970s (discovery).
4. Cave deposits.
5. No
6. Mousterian unit, layer 6_5.
7.1 Mousterian.
7.2 Levallois.
7.3 No
7.4 No
7.5 No
7.6 No
7.7 No
8.1 Large and small mammals.
8.2 No
9.1 No
9.2 No
9.3 No data.
10. gb 77 C13 C65 3; gb 78 b14 C5 26; gb 78 b13 C65 66.
10.1 –
10.2 All belong to adult individuals (tooth maturation and wear).
10.3 –
10.4 gb 77 C13 C65 3: RP^4; gb 78 b14 C5 26: LI^2; gb 78 b13 C65 66: RM_2.
10.5 –
11. Musée archéologique de Dijon, 5 Rue Docteur Maret, 21000 Dijon.
12. –
13. –
14.1 No
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No
17. Maureille et al. (2008), Les dents moustériennes de la grotte Boccard, lieu-dit Basde-M1orant (commune de Créancey, Côted'Or, Bourgogne). *Bulletins et Mémoires de la Société d'Anthropologie de Paris* 20 (1-2), 59-78. https://doi.org/10.4000/bmsap.6047. P, R, A; Thévenot J.-P. (1978), Bourgogne. *Gallia préhistoire*, 21 (2), 573-575. A, P

Code data collected by: Jean-Luc Voisin

1. **GROTTE CASTAIGNE**, Caminero
2. Cave, close to the village of Torsac, 6,5 km south of Angoulême, France; 45°37' N, 0°11' E.
3. L. Duport 1961.
4. Cave deposit.
5. No
6. Level 2.
7.1 Mousterian, La Ferrassie type.
7.2 Levallois.
7.3 No
7.4 No
7.5 No
7.6 No
7.7 No
8.1 Large mammals, small mammals.
8.2 No
9.1 No
9.2 No
9.3 No
10. Individual 1: No catalogue number (excavation number: Z15 couche ? #?). Individual 2: Cas A6 A6 (excavation number: couche ? # 2).; Individual 2 (?); No catalogue number (excavation number: A6 couche ? # 1).; Individual 4 Cast N° 1 (excavation number: A1 couche ? # 1).; Individual 4 (?); Castaigne (no excavation number): LC'. No catalogue or excavation number: L M_1 or M_2.; Z19 (excavation number: couche ? # 1).; Castaigne (excavation number: Z11 couche 2 # ?).; No catalogue number (excavation number: A11 couche ? # 1); Individual 5; Cast N° 1 (and an erased number) (excavation number: A1 couche ? # 1).; Individual 5 (?); No catalogue number (excavation number: carré ?, couche ? #1).; No catalogue number (excavation number: A20 couche? # 1); No catalogue number (excavation number: A20 couche ? # 1); Individual 2, 3, 4 or 5. Castaigne (excavation number: B6 couche 2 # ?); Individual 4 or 5 (?) Castaigne 6 or 9 (excavation number: A18 couche 2 # ?); Individual 6 (?) No catalogue number (excavation number: A20 couche ? # 2); Individual 4, 5 or 6 No catalogue number (excavation number: A11 couche ? # ?): right parietal; No catalogue number (excavation number: Z11 couche ? # ?): right temporal; No catalogue number (X22 couche 2a # ?): left femur. Gr. C. Z9 C2 n° 4 (excavation number: Z9 couche 2 # 4): right femur, Neandertal (?). but not the same individual as X22.; No catalogue number (no excavation number): right humérus, Neandertal (?); Individual 2 or 3 No catalogue number (excavation number: A16 couche ? # ?): Left clavicle.
10.1 –
10.2 No catalogue number (excavation number: Z15 couche ? # ?): 10.5 months (maturation of the tooth); Cas A6 (excavation number: A6 couche ? # 2): circa 5-6 years old; Cast N° 1 (excavation number: A1 couche ? # 1): Adolescent; Cast N° 1 (and an erased number) (excavation number: A1 couche ? # 1), young adult (tooth wear); Castaigne 6 or 9 (excavation number: A18 couche 2 # ?), young adult (tooth wear);

No catalogue number (excavation number: carré ?, couche ? #1): young adult (tooth wear); A20 (excavation number: couche ? # 1): young adult (tooth wear); No catalogue number (excavation number: A16 couche ? # ?): 4 to 8 years old (based on size); No catalogue number (excavation number: A6 couche ? # 1): 6-7 years old; Individual 2, 3, 4 or 5; Castaigne (excavation number: B6 couche 2 # ?): 6-7 to 18 years old, no information for aging.; Castaigne (no excavation number): 11-12 years old (no information for aging); No catalogue or excavation number: 11 to 16 years old (no information for aging); Z19 (excavation number: couche ? # 1): adolescent, no information for aging.; Castaigne (excavation number: Z11 couche 2 # ?): adolescent, no information for aging.; No catalogue number (excavation number: A11 couche ? # 1): adolescent, no information for aging.

10.3 Individual 4, 5 or 6 No catalogue number (excavation number: A11 couche ? # ?): R parietal (ff); No catalogue number (excavation number: Z11 couche ? # ?): R temporal (ff); No catalogue number (X22 couche 2a # ?): L femur (ff); Gr. C. Z9 C2 n° 4 (excavation number: Z9 couche 2 # 4): R femur (ff), Neandertal (?). but not the same individual as X22; No catalogue number (no excavation number): R humerus (ff), Neandertal (?); Individual 2 or 3 No catalogue number (excavation number: A16 couche ? # ?): L clavicle (f).

10.4 Individual 1 No catalogue number (excavation number: Z15 couche ? # ?): dental germ of LdI_2; Individual 2; Cas A6 A6 (excavation number: couche ? # 2): RdC_1, Neandertal?; Individual 4 Cast N° 1 (excavation number: A1 couche ? # 1): LP_3, Neandertal?; Individual 5 Cast N° 1 (and an erased number) (excavation number: A1 couche ? # 1): RC_1, Neandertal?; Individual 2 (?) No catalogue number (excavation number: A6 couche ? # 1): dental germ RM^1; Individual 2, 3, 4 or 5 Castaigne (excavation number: B6 couche 2 # ?): $LM^{1/2/3.}$ Neandertal? Individual 4 (?) Castaigne (no excavation number): LC'; No catalogue or excavation number: $LM_{1/2}$; Z19 (excavation number: couche ? # 1): LI_2; Castaigne (excavation number: Z11 couche 2 # ?): $RM_{1/2}$; No catalogue number (excavation number: A11 couche ? # 1): RI_2, Individual 4 or 5 (?) Castaigne 6 or 9 (excavation number: A18 couche 2 # ?): LM_3. Individual 5 (?) No catalogue number (excavation number: carré ?, couche ? #1): RI_2. No catalogue number (excavation number: A20 couche ? # 1): RI^2; No catalogue number (excavation number: A20 couche ? # 1): LC_1 Individual 6 (?) No catalogue number (excavation number: A20 couche ? # 2): RP^3.

10.5 No

11. Musée national de Préhistoire, 1 Rue du Musée, 24620 Les Eyzies, France.

12. –

13. –

14.1 –

14.2 –

14.3 –

14.4 –

14.5 –

14.6 –

14.7 –

14.8 –

14.9 –

14.10 –

15. –

16. –

17. Duport L. (1966), Les gisements préhistoriques de la vallée des Eaux-claires (I). IX. – Le gisement moustérien de Torsac (Charente), grotte E. Castaigne. *Mémoires de la Société archéologique et historique de la Charente*, année 1965, 95-100. P, A; Maureille B., et al. (2020), La grotte Castaigne (Commune de Torsac, Charente, France). Présentation d'un site méconnu riche en vestiges humains (dont des Néandertaliens), *Paléo* 30 (2), 196-221. https://doi.org/10.4000/paleo.5557 R, P; Maureille B., et al. (2021), La grotte Castaigne (Torsac, Charente, France): une nécessaire révision de la provenance de certains vestiges archéologiques fauniques. *Paléo* 31, 188-198. https://doi.org/10.4000/paleo.6307. A Z

18. Caminero was the name given by Vandermeerch in 1971 in the Oakley's catalogue (because the site is on a private property belonging to the Caminero familly). The most used named is Castaigne or grotte Castaigne. Numerous bone artefacts do not come from Castaigne cave but from other nearby sites.

Code data collected by: Jean-Luc Voisin

1. **GROTTE DE LA TOUR**, Tour of La Chaise
2. Close to the site La Chaise-de-Vouthon, close to the Village of Vouthon, Charente, France, 24 km East from Angoulême; 45°40'13" N, 0°26'48" E (about 130 m West of Abri Suard).
3. D. Augier 2006 (CDV-Tour 1 and the discovery of cavity named "grotte de la Tour").
4. Hyena den deposits.
5. No
6. Stratigraphy unknown, CDV-Tour 1 was found on surface.
7.1 No lithic artefacts are currently known.
7.2 –
7.3 No
7.4 No
7.5 No
7.6 No
7.7 No
8.1 Large mammals.
8.2 No
9.1 No
9.2 No
9.3 The human remains have been dated to MIS3 on the basis of large mammal fauna.
10. CDV-Tour 1.
10.1 –
10.2 CDV- Tour 1: adult (bone morphology).
10.3 CDV-Tour 1: L femur (ff).
10.4 No free teeth.
10.5 –
11. Musée d'Angoulême, square Girard II, rue Corneille, 16000 Angoulême, France.
12. –
13. CT Scan has been done, but could be lost.
14.1 No
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No
17. Puymérail L., et al. (2012), A Neanderthal partial femoral diaphysis from the "grotte de la Tour", La Chaise-de-Vouthon (Charente, France): Outer morphology and endostructural organization. *Comptes Rendus Palevol* 11 (8), 581-593. P, R; Puymérail L., et al. (2013), Analyse comparative structurale des diaphyses fémorales néandertaliennes BD 5 (MIS 5e) et CDV-Tour 1 (MIS 3) de La Chaise-de-Vouthon, Charente, France. *Paléo* 24, 1-18. https://doi.org/10.4000/paleo.2676. P, R

Code data collected by: Clément Zanoli, Jean-Luc Voisin

1. **GROTTE MANDRIN**, Mandrin Cave
2. Near to the village of Malataverne, 9 km South of Montélimar, Drôme, France; 44°28'10" N, 4°46'17" E.
3. G. Etienne in the early 1960s (site discovery); Y. Giraud 1990s (excavations); L. Slimak (ongoing excavations). Craniodental remains studied by C. Zanolli (study ofcraniodental remains); H. Coquegniot and O. Dutour (study of postcranial remains).
4. Cave deposits.
5. Unclear.
6. Level B2: Man16 B2 1267; Man15 B2 1700; Man16 B2 1268; Man15 B2 1800; Man16 B2 1239-1240; Man16 B2 1238; Man16 B2 1260; Man19 B2 2920; Man15 B2 2001; Man16 B2 1256; Man15 B2 1900; Man16 B2 1254; Man15 B2 2000; Man19 B2 2581; Man18 B2 1483; Man18 B2 1484; Man18 B2 1489; Man18 B2 1997; Man16 B2 1258; Man19 B2 2898; Man16 B2 1270; Man19 B2 2897; Man17 B2 1584; Man16 B2 1261; Man17 B2 1586; Man17 B2 1579; Man16 B2 1262;Man17 B2 1587. Level C: Man02 C 983; Man11 C 204. Level D: Man04 D 395; Man04 D 679; Man03 D 2734. Level F: Man98 F 811. Level G: Man15 G 2851; Man15 G 2852.

7.1 Level B1: Protoaurignacian; Levels B2, C, D: Mousterian (post-Neronian II); Level E; Levels F, G: Mousterian (Quina and Ferrassie, respectively).

7.2 Level B1: bladelets and blades with unipolar convergent flaking (Protoaurignacian); Levels B and C: flakes- discoid flaking (Mousterian); Level D: discoid and Levallois flakes (mostly pseudo-Levallois points, Mousterian); Level E: micro- and nanopoints, blades, bladelets, and bladelets; Layer F: flake production with retouching (Quina scrapers).

7.3 Level E (Neronian): pointed bone point, worked red deer canine, eagle talon with cutmarks, pebble with an engraved line separating the rock in two subequal parts.

7.4 No

7.5 No

7.6 No

7.7 Presence of soot on clastic fragments from the rock shelter's walls (evidence of fire).

8.1 Large mammals.

8.2 No

9.1 No

9.2 AMS ^{14}C, OSL and TL: Layer E (contains modern remains), dates to 56 800 to 51 700 cal. B.P.

9.3 No

10. Thorin (remains of a single individual): Man16 B2 1267; Man15 B2 1700; Man16 B2 1268; Man15 B2 1800; Man16 B2 1239-1240; Man16 B2 1238; Man16 B2 1260; Man19 B2 2920; Man15 B2 2001: R M1; Man16 B2 1256: L M2; Man15 B2 1900: R M2; Man16 B2 1254: L M3; Man15 B2 2000; Man19 B2 2581; Man18 B2 1483; Man18 B2 1484; Man18 B2 1489; Man18 B2 1997; Man16 B2 1258; Man19 B2 2898; Man16 B2 1270; Man19 B2 2897; Man17 B2 1584; Man16 B2 1261; Man17 B2 1586; Man17 B2 1579; Man16 B2 1262; Man17 B2 1587. Other individuals: Man02 C 983; Man11 C 204; Man04 D 395; Man04 D 679; Man03 D 2734 (Neandertal ?); Man98 F 81; Man15 G 2851; Man15 G 2852(Neandertal ?). MNI: 7 (Levels B2 to G).

10.1 Thorin (skeleton Level B2): male (genetics).

10.2 Thorin individual: adult; juvenile teeth (based on tooth formation, Levels C to G); adult M_1 (tooth morphology, Level F).

10.3 Thorin: Man17 B2 1584: Maxillary (ff); Man16 B2 1262: Proximal phalanx 1(f); Man17 B2 1587: intermediate phalanx 2 (f); Man16 B2 1261: distal phalanx 1(f); Man17 B2 1586: distal phalanx 2 (f); Man17 B2 1579: distal phalanx 3 (f); Man19 B2 2581: mandible (f) with following teeth: LI_1, LI_2, RI_1, RI_2, RC_1, RP_3, RP_4, RM_1, RM_2.

10.4 Thorin: Man16 B2 1267: LI^1; Man15 B2 1700: RI^1; Man16 B2 1268: LI^2; Man15 B2 1800: RI^2; Man16 B2 1239 – 1240: LC^1; Man16 B2 1238: LP^3; Man16 B2 1260: LP^4; Man19 B2 2920: LM^1; Man15 B2 2001: RM^1; Man16 B2 1256: LM^2; Man15 B2 1900: RM^2; Man16 B2 1254: LM^3; Man15 B2 2000: RM^3; Man19 B2 2581: LI_1, LI_2, RI_1, RI_2, RC_1, RP_3, RP_4, RM_1, RM_2; Man18 B2 1483: LC_1; Man18 B2 1484: LP_3; Man18 B2 1489: LP_4; Man18 B2 1997: LM_1, LM_2; Man16 B2 1258: LM_3; Man19 B2 2898: RM_3; Man16 B2 1270: LM4; Man19 B2 2897: RM4. Other individuals: Man02 C 983: LM_3; Man11 C 204: L dM_2; Man04 D 395: R dM^2; Man04 D 679: R dM^2; Man03 D 2734: tooth fragment (Neandertal ?); Man98 F 811: LM_1; Man15 G 2851: RdM_1 (Neandertal ?); Man15 G 2852: tooth fragment (Neandertal ?) Most teeth: worn and slightly damaged.

10.5 Two mandibular distomolars (L and RM_4) are identified in the Neanderthal individual Thorin (Level B2) and bone exostoses are present on the maxillary fragment. Thick cementum layer is visible on all tooth roots.

11. Laboratory CAGT, UMR 5288, University of Toulouse.

12. –

13. MicroCT scans of the human remains will be released on the following website upon detailed publication: https://human-fossil-record.org/.

14.1 Tooth and sediment.

14.2 MAN-15-B2-1600 / CGG_2_016357 (Thorin's tooth, Level B2).

14.3 Laboratory CAGT, UMR 5288, University of Toulouse.

14.4 ENA project PRJEB73284 (in press).

14.5 Nuclear DNA and mtDNA for Thorin's tooth and sediment DNA.

14.6 –

14.7 1.33 of the nuclear genome and 5613 for the mtDNA.

14.8 –

14.9 M for Thorin

14.10 –

15. Isotopic analyses of C, O and Sr on Thorin's teeth and fauna.

16. –

17. Slimak L., et al. (2022), Modern human incursion into Neanderthal territories 54,000 years ago at Mandrin, France. *Science Advances* 8: eabj9496. P, D; Slimak L., et al. (2024), Long genetic and social isolation in Neanderthals before their extinction. *Cell Genomics* (in press). P, S, G, E, D; Yvorra P., Slimak L. (2001), Grotte Mandrin à Malataverne (Drôme). Premiers éléments pour une analyse spatiale des vestiges en contexte moustérien. *Bulletin de la Société préhistorique française*, 98 (2), 189-205. https://doi.org/10.3406/bspf.2001.12482 A, D

Code data collected by: Jean-Luc Voisin

1. **GROTTE SIROGNE**, Croze del Dua, Crozo del Dua
2. Cave is located at a place called *Merle* near the village of Rocamadour (Lot), France; 44°47'57" N, 1°39'15" E.
3. A. Niéderlander, first half of the 20th century (site discovery); E. Genet-Varcin 1966 (study of the hominin remains); P. Bayles 2013 (new excavations).
4. Cave deposits.
5. No
6. No information.
7.1 Mousterian.
7.2 Not studied.
7.3 No
7.4 No
7.5 No
7.6 No
7.7 No
8.1 No
8.2 No
9.1 No
9.2 No
9.3 No
10. Croze 1, Croze 2, Croze 3, Croze 4, Croze 5, MNI: 3. New skeletal material discovered in excavations by P. Bayle (still under study): Mandible; MNI: 2.
10.1 –
10.2 Croze 1: 7 years old (root formation stage, tooth wear); Croze 2: 9 years old (tooth wear and calcification stage); Croze 3: 8-9 years old (root formation stage, tooth wear); Croze 4: 13-14 years old (crown formation stage); Croze 5: 15 years old (roots formation stage).
10.3 Mandible (ff) from excavations by P. Bayle.
10.4 Croze 1: LC^1 (i); Croze 2: LP_4 (i); Croze 3: RM^2 (i); Croze 4: RM^3 (i); Croze 5: RM^3 (i).
10.5 No
11. Remains from exavatons by Niéderlander are lost. Material from excavations by P. Bayle: Laboratory, UMR PACEA 5199 – Universite de Bordeaux, Bâtiment B2, Allée Geoffroy Saint-Hilaire CS 50023, 33615 Pessac Cedex, France.
12. –
13. –
14.1 –
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –

14.10 –
15. No
16. No
17. Bayle P., et al. (2014), New Neandertal remains from Sirogne cave, Rocamadour (Lot, France). *Proceedings of the European Society for the study of Human Evolution*, 3, 36. Z E D ; Genet-Varcin E. (1962), Évolution de la couronne de la seconde prémolaire inférieure chez les Hominidés. *Annales de Paléontologie – Vertébrés*, 48, 59-82, P; Genet-Varcin E. (1966), Étude des dents permanentes provenant du gisement moustérien de la Croze del Dua. *Annales de Paléontologie – Vertébrés*, 52 (1), 89-114. P R; Niéderlander A. (1951), La préhistoire de la région de Gramat. *Bulletin de la Société des Études Littéraires, Scientifiques et Artistiques du Lot*, 72 (4), 162-167. A

Code data collected by: T. Pereira

1. **GRUTA DA FIGUEIRA BRAVA**, Figueira Brava, Figueira Brava Cave
2. Portugal, Estremadura, Lisboa district, Lourinhã municipality; 39°10'52.57"N, 9°19'30.89"W.
3. Leonel Trindade 1925.
4. Cave deposits.
5. No
6. Bed 2.

7.1 Mousterian.
7.2 Levallois, Discoidal, Radial, Chopper/flake, expedient.
7.3 No
7.4 No
7.5 *Steromphala*, *Littorina*, *Bittium*, *Nucella*, *Tritia*, *Glycymeris*, *Ostrea*, *Pecten* (none modified).
7.6 No
7.7 Fireplace.
8.1 Large and small mammals, molluscs, fish, birds, marine mammals (Nabais, Zilhão 2019; Zilhão et al., 2020).
8.2 Carbonized plant remains: *Pinus pinea, Pinus* sp. Conebract, nutshell, needle, *Juniperus* sp., Conifer, Fabaceae, *Olea europaea, Quercus* sp. deciduous, *Quercus* sp. evergreen, *Quercus* sp., *Prunus* sp., *Rhamnus-Phillyrea*, *Ficus carica*, *Salix-Populus*, *Vitis vinifera*, *Angiosperma*, *Arbutus unedo*, *Pistacia* sp., bark, *Ficus carica* (uncharred seed), *Olea europaea* (uncharred seed), *Rubus* sp. (uncharred seed), *Chenopodium album* (uncharred seed).
9.1 No
9.2 All dates collected from Zilhão et al., 2020. Radiocarbon dating: Layer 2: OxA-19978, *Patella depressa*, 2677±28. Layer 2, 60 cm below 1st bone bed: OxA-19979, *Patella vulgata*, 36420±240. Layer 2: OxA-19980, *Patella vulgata*, 39750±400. Layer 2, OxA-19981, *Patella vulgata*, 40380±340. Layer 2: OxA-19982, *Patella vulgata*, 44900±500. spit A1, unit IT0: OxA-24055, *Patella vulgata*, 12880±45. spit A1, unit IT0: OS-114170, *Littorina obtusata*, 7390±25. unit MC2, 6.705 m asl: OxA-24051, *Patella* sp*.,* 44050±450. unit MC2, 6.576 m asl: OxA-24052, *Patella vulgata*, 41890±360. unit MC2, 5.914 m asl: OxA-24053*, Glycymeris* sp. 23120±90. unit MC2, 5.784 m asl: OxA-24054, *Glycymeris* sp., 36530±230. unit MC2, 5.784 m asl: OxA-X-2446-7, *Mytilus sp*., 32250±180. unit MC3, 5.464 m asl: OxA-24050, *Patella sp.,* 36420±230. unit LC1, 4.918 m asl: OxA-X-2442-10, *Mytilus* sp., 13720±50. U -series dating: samples from the flowstone capping the Area C Pleistocene deposit: 1025-9 (top), UEVA 1737, 24.308±0.873; 1025-1 (base), UEVA 1731, 52.194±0.618; 1107-1 (top), UTO 436, 25.945±2.428; 1107-2 (base), UTO 437, 51.123±1.236. Samples from stalagmites and flowstone capping the Area F Pleistocene deposit: 1028-2 (middle), UTO 209, 57.595±1.085; 1028-1 (base), UTO 208, 60.669±1.308; 1101-2 (top), UTO 428, 63.653±2.261; 1101-1 (base), UTO 427, 66.484±0.778; 1102-1 (top), UTO 431, 47.117±1.545; 1102-2 (base), UTO 432, 67.294±0.897; 1103-1 (top), UTO 770, 28.574±0.599; 1103-2 (base), UTO 771, 52.329±0.821; 1104-2 (top), UTO 426, 61.853±1.041; 1104-1 (base), UTO 425, 64.873±0.957; 1105-1 (top), UTO-433, 6.226±0.918; 1105-3 (base), UEVA 417, 62.890±1.240; 1207-4 (middle), UTO 777, 48.162±1.084; 1207-6 (base), UTO 776, 79.400±2.511; 1303-3 (top), UEVA 1390, 49.608±0.526; 1303-1 (bottom), UEVA 1384, 58.851±0.862; 1304-5 (IT1top), UEVA 1724, 17.072±3.530; 1304-4 (IT1base), UEVA 1723, 16.487±3.637; 1304-3 (IH1top), dlh 1211, 15.764±0.863; 1304-1 (IH1base), dlh 1029, 28.941±0.730; 1305-9 (top), dlh 1213, 55.800±0.552; 1305-1 (base), dlh 1212, 69.232±0.926. Corresponds to unit IH5, an episode of calcite precipitation: 1208-5, UEVA 1729, 87.693±0.762; 1208-4, UEVA 1728, 88.137±0.742; 1208-3, UEVA 1727, 87.797±0.649; 1208-2, UEVA 1726, 88.924±0.688; 1208-1, UEVA 1725, 87.559±0.626. Corresponds to unit IH7, an episode of calcite precipitation: 1106-2 (top), dlh 1326, 89.766±1.643; 1106-3 (top), dlh 1327, 88.044±1.237; 1106-4 (top), dlh 1328, 86.765±1.078; 1106-5 (top), dlh 1329, 93.590±2.320; 1106-6 (top), dlh 1330, 91.563±2.467; 1106-top isochron, 87.000±1.600; 1106-1 (base), dlh 1325, 88.670±1.162. Formed during the deposition of unit IH8 (FB-1301 at a slightly higher elevation than FB-1302: 1301-7, UEVA 1713, 87.582±0.913; 1301-6, UEVA 1712, 95.614±2.368; 1301-5, UEVA 1711, 87.444±0.870; 1301-4, UEVA 1710, 89.641±1.592; 1301-3, UEVA 1709, 88.475±1.457; 1301-2, UEVA 1708, 86.094±0.871; 1301-1, UEVA 1707, 87.194±0.979; 1302-3, UEVA 1705, 89.260±3.459; 1302-2, UEVA 1704, 90.818±1.625; 1302-1, UEVA 1703, 90.343±1.432. Corresponds to unit IL1 and is a stalagmite: 1209-3, UEVA 1389, 94.326±4.102; 1209-4, UEVA 1701, 90.875±0.968; 1209-5, UEVA 1702, 92.113±1.134. Corresponds to unit IB1, an episode of flowstone formation: 1306-1 (top), dlh 1206, 107.361±3.929; 1306-3 (basal), dlh 1208, 141.513±1.588; 1306-2 (bottom), dlh 1207, 150.169±2.072. Entrance 2. Both document flowstone formation across the whole area: 1406-4 (top), UEVA 993, 40.742±0.496; 1406-1 (base), UEVA 990, 45.649±0.613; 1407-5 (top), UEVA 1025, 26.965±10.083; 1407-1 (base), UEVA 1021, 78.212±52.273. Entrance 3. All three samples document flowstone formation across the whole area: 1026-1a, UEVA 1823, 56.835±6.317; 1026-1b, UEVA 1824, 59.524±5.425; 1026-1c, UEVA 1825, 61.180±6.123; 1402-1, UEVA 1051, 61.816±4.478; 1402-2, UEVA 1052, 63.355±7.217; 1405-1 (top), UEVA 987, 46.184±16.162; 1405-3 (base), UEVA 989, 46.360±13.105. Date of a single calcite lamina taken along the outer rind of a stalagmite hanging from the roof above the erosionally truncated sedimentary fill: 1027-1, UTO 264, 78.666±3.482; 1027-2, UTO 265, 83.866±9.771; 1027-3, UTO 266, 81.850±1.717; 1027-4, UEVA 1821, 81.841±3.697; 1027-5, UEVA 1822, 84.445±3.997; 1027 isochron, 81.000±6.000. From the rind of the column separating Area F from Entrance 3: 1029-2, UEVA 1820, 93.162±2.382; 1029-1, UEVA 1819, 89.573±1.395. Luminescence dating: Area F trench: 12-5, 95.0±5.3; 12-6, 93.9±5.6. Entrance 3 trench: 12-3, 97.8±6.0. Area C trench: 12-1, 86.1±6.8; 12-2, 89.3±6.4; 12-4, 110.2±8.3.
9.3 Justaposition of the levels.
10. One tooth (no catalogue number).
10.1 –
10.2 16 to 17 years old.
10.3 No
10.4 LP^4
10.5 Enamel punctiform hypoplasies, an ante mortem lesion with loss of some enamel with evidence of light afterwards fonctional abrasion; cement coating on very restricted crown surface areas, a pulpolite and the reactional dentine formation, radicular hypercementosis.

11. –
12. –
13. –
14.1 No
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No
17. Antunes, M. T., Cardoso, J. L. (2000), Gruta Nova da Columbeira, Gruta das Salemas and Gruta da Figueira Brava: stratigraphy and chronology of the Pleistocene deposits. *Memórias da Academia das Ciências de Lisboa: Classe de Ciências* 38: 23-67. A; Antunes, M. T. (1990 – 1991), O Homem da Gruta da Figueira Brava (ca. 30000): contexto ecológico, alimentação, canibalismo. *Memórias da Academia das Ciências de Lisboa – Classe de Ciências* 31: 487-536 A; Cardoso, J., Raposo, L. (1993), As Indústrias Paleolíticas Da Gruta Da Figueira Brava (Setúbal), *Proceedings of the 3rd meeting of the Iberian Quaternary,* 451-456 A; Antunes. M. T. (1990/91), O homem da gruta da Figueira Brava (ca. 30 000 BP). Contexto ecológico. alimentação. canibalismo. *Memórias da Academia das Ciências de Lisboa – Classe de Ciências* 31, 487-536. E; Zilhão, J. et al. (2020), Last Interglacial Iberian Neandertals as fisher-hunter-gatherers*, Science* 367 (6485), eaaz7943. Nabais, M., Zilhão, J. (2019), The consumption of tortoise among Last Interglacial Iberian Neanderthals. *Quaternary Science Reviews* 217, 225-246, Z

Code data collected by: T. Pereira

1. **GRUTA DA OLIVEIRA**, Oliveira Cave, Cone Mustierense, Mousterian Cone
2. Portugal, Estremadura, Lisboa district, Torres Novas municipality; 39º30'23" N, 8º36'49' W.
3. J. Zilhão, 1999.
4. Cave deposits.
5. No
6. Oliveira 1 (OLV U18/A5 base) layer 8. Oliveira 2 ((OLV T17-73/A9) Layer 10. Oliveira 3 (OLV O17-362/A27) Layer 18. Oliveira 4 (OLV O18-720/A44) Layer 19. Oliveira 5 (Olv P15-478) Base of layer 17; Oliveira 6 (Olv P16-812) Base of layer 17; Oliveira 7 (Olv O16-422) upper portion of layer 18. Oliveira 8 (Olv N16-373) layer 22. Oliveira 9 (Olv N15-383) hard breccia facies of layer 22.
7.1 Mousterian.
7.2 Levallois, Discoidal, Radial, Chopper/flake, expedient.
7.3 No
7.4 No
7.5 No
7.6 No
7.7 Fireplace.
8.1 Large and small mammals, reptiles (Nabais 2010; Zilhão et al. 2010).
8.2 *Olea europaea*, *Pinus* sp., *Erica* sp, *Pinus sylvestris* (charcoal analysis, Badal et al. 2012).
9.1 No
9.2 ^{14}C-AMS dates: Layer 8: GrA-29384, *Olea* sp., 6,055±45 (intrusive collected in a borrow. Layer 8: GrA-10200, burned bone, 35,760±280 (date on an alcaline fraction). Layer 8: OxA-8671, 37,100±830. Layer 9: GrA-9760, burned bone, 42,610±390 (date on an alcaline fraction). Layer 9: Beta-111967, burned bone, 44,080±990. Layer 11: OxA-8672, burned bone, 46,070±1330. Layer 11: OxA-9379 >25,850±550 (N/A) (low collagen). Layer 12: GrA-24408, *Pinus* sp., 26,940/+270/+250 (N/A) (anomalous, minimal age). Layer 13: GrA-24410, *Erica* sp., 43,310±490. Layer 14: GrA-22024, 46,350±2050. Layer 14: OxA-13137 *Pinus sylvestris* (anomalous, minimal age). Layer 14: Beta-183537, *Pinus sylvestris*, 44,380±960. GrA-24407, *Pinus sylvestris*, 42,160±340. Layer 18: GrA-29385, burned bone, 41,960±330 (Angelucci e Zilhão 2009). ^{238}U/^{232}Th dates: Mousterian Cone, SMU-247E1, U-Th, 70,250±9000. Mousterian Cone, SMU-308-247E2, U-Th, 70,250±9000 53,000/+5,600/-5,300 (Second measurement of SMU-247) (Angelucci e Zilhão 2009). UoB-CAT5, Upper part of flowstone capping the Pleistocene fill in square L22, 51.0±25.2. UoB-CAT6, Upper part of flowstone capping the Pleistocene fill in square L22 (repeat subsample), 24.0±2.2. UoB-CAT7, Basal part of same flowstone; minimum age for the underlying Mousterian layers, 23.8±1.1. CENIEH-UTO213, Basal part of flowstone capping the Pleistocene fill in square Y18; minimum age for the underlying Mousterian layers, 93.2±26.1. CENIEH-UTO244, Upper part of stalagmite growing over the sediment fill of the passages located inward of the Cone Mousteriense, 102.7±1.8. CENIEH-UTO243, Basal part of same stalagmite; maximum age of the Gruta da Oliveira/Cone Mousteriense fill, 104.4±2.7. CENIEH-UTO272, Upper part of fallen

stalagmite; maximum age of roof collapse at the interface between layers 19 and 20, 148.6±4.1. CENIEH-UTO273, Additional sample from upper part of same stalagmite, 160.0±5.6. CENIEH-UTO242, Additional sample from upper part of same stalagmite, 155.3±6.7. CENIEH-UTO274, Sample 1.5 cm above base of same stalagmite, 163.7±6.8. CENIEH-UTO241, Sample 1 cm above base of same stalagmite, 83.4/þ204.2/-68.5. CENIEH-UTO240, Base of same stalagmite, 81.6/þ202.4/-65.4. CENIEH-UTO154, Upper part of stalagmite in wall niche sealed by the Mousterian fill; maximum age for overlying layers 7e10, 134.2±22.9. CENIEH-UTO157, Intermediate sample from same stalagmite, 139.9±4.3. CENIEH-UTO156, Intermediate sample from the same stalagmite, 134.9±8.8. CENIEH-UTO155, Intermediate sample from the same stalagmite, 142.5±4.2. CENIEH-UTO153, Intermediate sample from same stalagmite, 144.9±6.3. CENIEH-UTO152, Basal part of same stalagmite, 191.3±19.2. UoB-CAT3, Upper part of flowstone coating a lateral void between the sediment fill and the cave wall in square R16 at the base of layer 13, 22.8±1.8. UoB-CAT4, Basal part of same flowstone, 24.2±2.1. UoB-CAT1, Upper part of flowstone coating a lateral void between the sediment fill and the cave wall in square R16 at the top of layer 14, 21.0±1.4. UoB-CAT2, Basal part of same flowstone, 22.0±0.8 (Hoffmann et al 2013). U-series age of basal layer 4 of Gruta da Oliveira sample X18-92 (flowstone capping the Side Passage succession; 2s uncertainties): UEVA 518 Isochron I #1: 48.504 ± 20.422. UEVA 519 Isochron I #2: 44.258 ± 21.357. UEVA 520 Isochron I #3: 36.434 ± 27.828. UEVA 521 Isochron I #4: 44.325 ± 16.948. UEVA 1796 Isochron I #5: 46.028 ± 24.437. UEVA 1797 Isochron I #6: 47.658 ± 24.111. UEVA 1798 Isochron I #7: 52.425 ± 20.689. UEVA 1799 Isochron I #8: 48.947 ± 23.842. UEVA 1800 Isochron I #9: 51.745 ± 24.028. Isochron AgeI $+92$ -29. UEVA 1801 Isochron II #1: 45.476 ± 30.388. UEVA 1803 Isochron II #2: 49.975 ± 25.581. UEVA 1804 Isochron II #3: 48.248 ± 25.891. UEVA 1805 Isochron II #4: 53.163 ± 26.454. UEVA 1806 Isochron II #5: 46.527 ± 30.579. UEVA 1807 Isochron II #6: 48.755 ± 24.257. UEVA 1808 Isochron II #7: 54.280 ± 23.366 (Zilhão et al., 2021). Isochron Age II: 70^{+38}_{-28}. All data combined 64^{+27}_{-17}. TL dates: all dates on heated flint samples. Layer 13: OLV-09, 59.6±12.1. Layer 13: OLV-12: 52.1±11.6. Layer 13: OLV-17, 54.2±17.5 (Weighted mean 55±7). Layer 14: OLV-20, 76.6±20.8. Layer 14: OLV-22, 75.1±14.8. Layer 14: OLV-25, 76.4±17.9. Layer 14: OLV-28, 78.6±19.0. Layer 14: OLV-29, 79.2±20.5, (Weighted mean 77±8) (Richter, et al., 2014). OSL dates: Layer 8: D16-1, Single-grain OSL, 83.1 ± 7.0. Layer 11: AMD16-2, Single-grain OSL, 84.9 ± 6.0. Layer 14: AMD16-7, Single-grain OSL, 82.6 ± 5.1. Layer14: AMD16-6, Single-grain OSL, 86.0 ± 6.0. Layer 15: AMD16-8, Single-grain OSL, 109.3 ± 14.2. Layer 22: AMD16-5, Single-grain TT-OSL, 266.0 ± 21.6. Layer 80 AMD16-5, pIRIR225, 265.7 ± 15.3 (Angelucci et al., 2009).

9.3 Justaposition of the levels.

10. Oliveira 1 (OLV U18/A5 base); Oliveira 2 ((OLV T17-73/A9); Oliveira 3 (OLV O17-362/A27); Oliveira 4 (OLV O18-720/A44); Oliveira 5 (Olv P15-478); Oliveira 6 (Olv P16-812); Oliveira 7 (Olv O16-422); Oliveira 8 (Olv N16-373); Oliveira 9 (Olv N15-383).

10.1 Oliveira 9 (Olv N15-383): male (proteomic analysis, Shaw et al. 2024).

10.2 Oliveira 1 (OLV U18/A5 base) adult (based on bone surface, Schauer and Black 2000; Trinkaus et al. 2007). Oliveira 2 (OLV T17-73/A9) adult (epiphyseal fusion, Trinkaus et al. 2007). Oliveira 3 (OLV O17-362/A27) adolescent (but age is more likely) Oliveira 4 (OLV O18-720/A44) late adolescent age/ adult (Trinkaus et al., 2007).

Oliveira 5 (Olv P15-478) adult (epiphyseal fusion, (Willman et al., 2012). Oliveira 6 (Olv P16-812) adult (tooth wear and morphology, (Willman et al., 2012). Oliveira 7 (Olv O16-422) adult (overall size and morphology) (Willman et al., 2012). Oliveira 8 (Olv N16-373) median age >~9 years if an M1, >~ 14 years if an M2, and >~20 years if an M3 (root development, Willman et al., 2012). Oliveira 9 (Olv N15-383) median age of ~13 years. (root development, Willman et al., 2012).

10.3 Oliveira 1 (OLV U18/A5 base) middle manual phalanx (d); Oliveira 2 (OLV T17-73/A9) proximal end of a R ulna (f); Oliveira 3 (OLV O17-362/A27) distal end of a R humeral diaphysis (ff); Oliveira 4 (OLV O18-720/A44) complete diaphyseal contour of a L tíbia (f); Oliveira 5 (Olv P15-478) partial proximal diaphysis and base of a R 2nd manual proximal phalanx (f); Oliveira 7 (Olv O16-422) humerus (ff).

10.4 Oliveira 6 (Olv P16-812) permanent P or M; Oliveira 8 (Olv N16-373) M3 or a more mesial M prior to the eruption of the next distal molar (f- partial crown from the occlusal surface to the cervix and half of a root still encased in the breccia); Oliveira 9 (Olv N15-383) RP_3 (d).

10.5 Oliveira 1 (OLV U18/A5 base) ossifications of the flexor digitorum superficialis tendon. Given that they are bilaterally similar on the bone; Oliveira 4 (OLV O18-720/A44) an irregularity of the anterior crest, 15 mm long and 5 mm wide, starting 8 mm distal of midshaft. It represents, at the most, a healed minor trauma to the periosteal tissue. There is no porosity, and it only affected the surface of the bone; Oliveira 6 (Olv P16-812) There is no occlusal enamel, only the remains of a worn dentine basin (probably Smith wear Stage 7 and Molnar wear Stage 6). Oliveira 7 (Olv O16-422) Diaphyseal hypertrophy. Oliveira 8 (Olv N16-373) There is a small hypoplastic pit on the buccal face of the hypoconid, 4.4 mm from the cervix; unworn buccal crown height on the hypoconid is 6.2 mm. Around the distal crown, 2.0 mm from the cervix, there is a shallow groove with traces of calculus. The groove appears to be a mild linear dental enamel hypoplasia (Trinkaus, E. et al. 2007, Willman et al, 2012).

11. Museu Nacional de Arqueologia, Praça do Império, 1400-026 Lisboa, Portugal.

12. –

13. 3D virtual reconstruction of the Oliveira 9 P3 can be viewed in the online issue Willman et al, 2012) at American Journal of Physical Anthropology 149:39–51 (2012), which is available at wileyonlinelibrary.com.

14.1 No

14.2 –

14.3 –

14.4 –

14.5 –

14.6 –

14.7 –

14.8 –

14.9 –

14.10 –

15. $^{87}Sr/^{86}Sr$ measurements made by laser ablation multicollector inductively coupled plasma mass spectrometry along the growth axis of the enamel of Oliveira 8 (Olv N16-373) (Linscott et al. 2023).

16. Amelogenin analysis on tooth enamel of Oliveira 9 (Olv N15-383) (Shaw et al. 2024).

17. Hoffmann, D.L., et al. (2013), New U-series results for the speleogenesis and the Palaeolithic archaeology of the Almonda karstic system (Torres Novas, Portugal). *Quaternary International* 294,168–182. A, D; Deschamps, M., Zilhão, J. (2018), Assessing site formation and assemblage integrity through stone tool refitting at Gruta da Oliveira (Almonda karst system, Torres Novas, Portugal): A Middle Paleolithic case study. *PLoS ONE* 13(2), e0192423 A; Zilhão, J. et al. (2021), A revised Last Interglacial chronology for the Middle Palaeolithic sequence of Gruta da Oliveira (Almonda karst system, Torres Novas, Portugal). *Quaternary Science Reviews* 258, 106885. A; Angelucci, D., Zilhão, J. (2009), Stratigraphy and Formation Processes of the Late Pleistocene Deposit at Gruta da Oliveira, Almonda Karstic System, Torres Novas, Portugal. *Geoarchaeology* 24(3), 277-310 A; Badal, E. et al. (2012), Middle Palaeolithic wood charcoal from three sites in South and West Iberia: biogeographic implications, In: Badal, E.; Carrión, Y.; Macías, M.; Ntinou, M (eds.). *Wood and charcoal. Evidence for human and natural History*, València, Universitat de València, 13-24 E; Marks, A. et al. (2001), The lithic assemblages of the Late Mousterian at Gruta da Oliveira, Almonda, Portugal. In: Zilhão, J.; Aubry, T.; Carvalho, A. F. (eds.), *Les premiers hommes modernes de la Péninsule Ibérique,* Lisboa, Instituto Português de Arqueologia, 145-154 A; Matias, H. (2012), *O aprovisionamento de maté- rias -primas líticas na Gruta da Oliveira (Torres Novas)*. Disse tação de Mestrado, Faculdade de Ciências (Universidade de Lisboa) R; Nabais, M. (2010), *Middle Palaeolithic Tortoise Use at Gruta da Oliveira (Torres Novas, Portugal)*. Dissertação de Mestrado, Institute of Archaeology (University College London) Z; Richter, D. et al. (2014) – Heated Flint from Gruta da Oliveira (Portugal): Dosimetric Challenges and Comparison of TL -dating Results with Radio carbon and U -series Dating. *Journal of Archaeological Science* 41, 705-715 A; Trinkaus, E. et al. (2007), Middle Paleolithic Human Remains From the Gruta da Oliveira (Torres Novas), Portugal. *American Journal of Physical Anthropology* 134, 263-273. P; Willman, J. et al. (2012), Middle Paleolithic Human Remains from the Gruta da Oliveira (Torres Novas), Portugal. *American Journal of Physical Anthropology* 149, 39-51. P; Zilhão, J. et al. (2010), Humans and Hyenas in the Middle Paleolithic of Gruta da Oliveira (Almonda karstic system, Torres Novas, Portugal). In: *1a Reunión de científicos sobre cubiles de hiena (y otros grandes carnívoros) en los yacimientos arqueológicos de la Península Ibérica*, Alcalá de Henares, Museo Arqueológico Regional, 298-308. Z; Zilhão, J. et al. (1993), Jazidas arqueológicas do sistema cársico da nascente do Almonda. *Nova Augusta* 7, 35-54. A; Linscott, B. et al. (2023), Reconstructing Middle and Upper Paleolithic human mobility in Portuguese Estremadura through laser ablation strontium isotope analysis. *PNAS* 120, 20 e2204501120. S; Matias, H. (2016), Raw material sourcing in the Middle Paleolithic site of Gruta da Oliveira (Central Limestone Massif, Estremadura, Portugal). *Journal of Lithic Studies* 3, 541-560. R. Shaw, H. et al. (2024), Sex estimation of a Neanderthal tooth fragment using a minimally destructive acid-etch 2 method for dimorphic enamel peptide analysis, Available at SSRN: https://ssrn.com/abstract=4763516. Prot.

Code data collected by: T. Pereira

1. **GRUTA NOVA DA COLUMBEIRA**, Columbeira Cave, Gruta Nova
2. Portugal, Estremadura, Lisboa district, Bombarral municipality; 39°17’53” N, 09°12’03” W.
3. Octávio da Veiga Ferreira, 1962.
4. Cave deposits.
5. No
6. Unit G1, Unit G3, Unit In a stalagmitic “islet” located at the interface between layer 7 and 8.

7.1 Mousterian / Cut at the back of the cave by an infill with UP.

7.2 Layer 4 to 9 – Levallois, Discoidal, Radial, Chopper/flake, expedient.

7.3 Bone (shapped massive trihedral pick made on a rhinoceros diaphyseal blank).

7.4 No

7.5 No

7.6 No

7.7 Layer 8 was an ash pit with hearths.

8.1 Large mammal, small mammal, birds, amphibians.

8.2 Yes, from layer 8, but not collected or studied.

9.1 No

9.2 GNdC-1-top (top of the stalagmitic crust sealing the Mousterian sequence), U-series: 1 423 ± 75 ka BP; GNdC-1-middle (middle of the stalagmitic crust sealing the Mousterian sequence), U-series: 8 654 ± 387 ka BP; GNdC-1-bottom (bottom of the stalagmitic crust sealing the Mousterian sequence) U-series: 20 704 ± 2 039 ka BP (Carvalho et al., 2018); Gif-2703 (16=7 carbonaceous earth), C14: 26,400±700 ka (Delibrias et al. 1986); SMU-23851 (layer 7, tooth enamel, U/Th: 54365 -27525+2 224 ka, SMU-235E1 (layer 7, tooth enamel), U/Th: 35876-35583+27299 ka, SMU-236E1 (layer 8, tooth enamel), U/Th: 101487 -55919 +38406 ka, SMU-236E1 (layer 8, tooth enamel), U/Th: 60927 -35522 +27405 ka (Raposo and Cardoso 1998). Unknown reference sample (layer 8, “trihedral pick,” made on a *Dicerorhinus hemitoechus* tibia), U-series: 87.1 ± 6.3 ka (Zilhão et al. 2011).

9.3 Units 3 to 9 between MIS 5 and MIS3 (fauna and litostrastigraphy).

10. One specimen without a catalogue number (tooth germ).

10.1 –

10.2 Infant?

10.3 –

10.4 LM_1 (germ).

10.5 –

11. Museu Nacional de Arqueologia, Praça do Império, 1400-026 Lisboa, Portugal.

12. –

13. –

14.1 No

14.2 –

14.3 –

14.4 –

14.5 –

14.6 –

14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No
17. Ferembach, D. (1964-1965[a]), La molaire humaine inférieure moustérienne de Bombarral (Portugal). Comunicações dos Serviços Geológicos, 48: 185-191. P; Cardoso, J.L. et al. (2002), *A Gruta Nova da Columbeira*. Câmara Municipal, Bombarral, Bombarral. A; Fernández-Laso, M.C. et al. (2015), Gruta Nova da Columbeira (Bombarral, Portugal): un modelo de ocupación en cueva durante el Paleolítico Medio. Resultados del estudio del registro de macromamíferos. *Trabajos de Prehistoria* 72 (2), 304-326. Z; Raposo, L., Cardoso, J.L. (1997), Notas acerca das industrias musterienses da Gruta Nova da Columbeira. In: *Actas do II Congreso de Arqueología Peninsular (Zamora 1996)* 1, Zamora, 27-33. A; Raposo, L., Cardoso, J.L. (1998), Las industrias líticas de la Gruta Nova de Columbeira (Bombarral, Portugal) en el contexto Musteriense Final de la Península Ibérica. *Trabajos de Prehistória* 55 (1), 39-62. D, A; Carvalho, M. et al. (2018), Rabbit exploitation in the Middle Paleolithic at Gruta Nova da Columbeira, Portugal. *Journal of Archaeological Science: Reports* 21, 821-832. Z, D; Jiménez Fuentes, E. et al. (1998), Presenciade Agrionemys (=Testudo) hermanni (Gmelin, 1789) en el Paleolítico Medio de la Gruta Nova da Columbeira (Bombarral, Provincia de Estremadura, Portugal). *Studia Geologica Salmantisensia* 34, 123-139. Z; Antunes, M. T., Cardoso, J. L. (2000), Gruta Nova da Columbeira,Gruta das Salemas and Gruta da Figueira Brava. Stratigraphy, and chronology of the Pleistocene deposits. In M. T. Antunes (Ed.), *Last Neanderthals in Portugal odontologic and other evidence*, Academia das Ciências de Lisboa, 23-67. A; Ferreira, O. d. V. (1984), O mais importante nível de ocupação do caçador Neandertal da Gruta Nova da Columbeira (Bombarral). In: *Volume d'Hommage au géologue Georges Zbyszewski. Editions Recherche sur les Civilisations*, 365-370. A; Figueiredo, S., Raposo, L. (2018), As Aves Como Recurso Alimen-tar do Homem do Paleolítico Médio: Interpretação tafonómica das acumulações faunísticas da Gruta Nova da Columbeira e da Foz do Enxarrique. *Boletim do Centro Português de Geo-História e Pré-História* 1(1), 57-63. Z; Figueiredo, S. et al. (2018), Pleistocene birds of Gruta Nova da Columbeira (Bombarral-Portugal): A paleontological and Paleoenvironmental approach. *Journal of Environmental Health Science and Engineering*, A7, 246-254. Z; Boneta Jiménez, I. et al. (2023), The turtles from the middle Paleolithic site of Gruta Nova da Columbeira (Bombarral, Portugal): Update through an archaeozoological perspective. *The Anatomical Record*, 1-15. Z; Zilhão, J. et al. (2011), Gruta Nova da Columbeira (Bombarral, Portugal): Site stratigraphy, age of the Mousterian sequence, and implications for the timing of Neanderthal extinction in Iberia. *Quartär* 58, 93-112. A, Str, D

Code data collected by: Giulia Marciani, Erica Piccirilli, Marco Peresani, Stefano Benazzi

1. **GUATTARI**, Grotta Guattari, Circeo
2. 300 m SE of the village of San Felice Circeo (Latina, Italy), about 5 m asl on the South-Eastern foot of the rocky promontory Monte Circeo; 41°14' N, 13°05' E.
3. A. Guattari and D. Bevilacqua, February 1939 (Guattari 1); M. Palombi, February, 1939 (Guattari 2); A. Ascenzi and G. Lacchei, August 1950 (Guattari 3); M.F. Rolfo and research group of the University of Rome "Tor Vergata", 2019-2023 (Circeo 4, 5, 6, 7, 8, 9, 10a, 10b, 11, 12, 13, 14, 15, 16a, 16b).
4. Cave deposit overlying the Tyrrhenian beach.
5. No
6. Guattari 1 (Circeo 1) and 2 (Circeo 2) were found on the paleosurface inside the cave (Antro dell'Uomo). Guattari 3 (Circeo 3) was found in the deposit ("breccia") outside the cave (Sergi e Ascenzi, 1955; Segre, 1991). Circeo 4, 5, 6, 7, 8, 9, 11, 12, 13, 14, 15, 16a, 16b, were found on the paleosurface inside the Antro del Laghetto. Circeo 10a and Circeo 10b were found in the area outside the cave.
7.1 Mousterian (Taschini, 1979).
7.2 Pontinian (local Mousterian) few Levallois, presence of Quina (Taschini, 1979).
7.3 No
7.4 No
7.5 No
7.6 No
7.7 –
8.1 Large mammals (Cardini, 1953; Petronio et al., 2021).
8.2 Shrubs: *Juniperus, Pistacia*; trees: *Quercus cerris, Fagus, Vitis*; herbaceous plants: *Poaceae* (grasses) (Rolfo et al. 2023).
9.1 –
9.2 The deposition of the human remains inside the cave (Guattari 1 and 2), uranium-series (calcite incrustations) and ESR (enamel of mammalian teeth): between 57 and 51 ka for (Schwarcz et al., 1991); U/Th datings on the speleothems, accumulation of sediments started at ~112 ka Rolfo et al. (2023); hyena activity in the cave between 66 ka and 65 ka.
9.3 Late Würm I – Early Wurm II (Blanc e Segre, 1953).
10. Circeo 1 (L,*) (Guattari 1), Circeo 2 (Guattari 2, mandible 2), Circeo 3 (Guattari 3, mandible B), Circeo 4, Circeo 5, Circeo 6, Circeo 7, Circeo 8, Circeo 9, Circeo 10 (a and b- 1 individual, R 1000a, R 1000b), Circeo 11 (R 2343), Circeo 12 (R 2262), Circeo 13 (R 2325), Circeo 14 (R 4400), Circeo 15 (R 2181), Circeo 16a, Circeo 16b.
10.1 Circeo 1: male (general morphology and discrete features, dimensions); Circeo 2: male (morphology and dimensions); Circeo 3: male (morphology and dimensions); Circeo 5: female (morphology and dimensions).
10.2 Circeo 1: adult (suture closure on the cranial vault); Circeo 2: adult (dental maturation and wear); Circeo 3: young adult (dental maturation and wear); Circeo 4: young adult (persistence of the sutural denticles); Circeo 5: young adult (sutural denticles); Circeo 10: adult (dental maturation and wear); Circeo 11: adult (dental maturation and wear); Circeo 12: adult (dental maturation and wear); Circeo 13: adult (dental matura-

tion and wear); Circeo 14: adult (dental maturation and wear); Circeo 15: adult (dental maturation and wear).

10.3 Circeo 1: cranium with damaged base and right orbital region (d); Circeo 2: incomplete mandible (missing: left ramus, alveolar part of the distal left corpus, part of the right ramus) (f/f); Circeo 3: incomplete mandible (missing: left ramus, right condyle and extremity of right coronoid process) (f/f); Circeo 4: portion of calvarium (4 elements constituting a large part of the frontal bone and a small part of the left parietal bone) (f); Circeo 5: calvarium; Circeo 6: mandible anterior interforaminal portion (synphysis) (d); Circeo 7: R femur (d); Circeo 8: occipital bone (squama occipitalis) (d); Circeo 9: palatine process of maxilla (d); Circeo 10a: alveolar fragment (d); Circeo 16a: L incomplete coxal bone (f); Circeo 16b: R incomplete coxal bone (f).

10.4 Circeo 2: RM_3; Circeo 3: RI_2, RC_1, RM_1, RM_2, RM_3, LI_2, LC_1, LP_3, LM_1, LM_2, LM_3; Circeo 10a: RM^2; Circeo 10b: RM^3 (adjacent to Circeo 10a); Circeo 11: RM_3; Circeo 12: LM_3; Circeo 13: LC_1; Circeo 14: P^4; Circeo 15: RM^1

10.5 Circeo 5: mild internal frontal hyperostosis; Circeo 6: probable bone atrophy due to intravitam tooth loss; Circeo 9: alveolar ridge atrophy due to tooth absence; Circeo 11: hypercementosis.

11. Circeo 1- 16: Museo Preistorico Etnografico “L. Pigorini”, Piazzale G. Marconi 14, 00144 Roma.

12. Circeo 1: Museo Preistorico Etnografico “L. Pigorini”, Piazzale G. Marconi 14, 00144 Roma, Italy; Circeo 2: Istituto Italiano di Paleontologia Umana, presso il Convitto Nazionale Regina Margherita, in Piazza R. Bonghi 2, Anagni, Italy.

13. Circeo 1: CT on the Digital Archive of the Neanderthal Museum (https://archiv.neanderthal.de/data/; former Nespos).

14.1 Circeo 1: Bone.

14.2 Circeo 1: Failed.

14.3 –

14.4 –

14.5 Circeo 1: Mitochondrial DNA.

14.6 –

14.7 –

14.8 –

14.9 –

14.10 –

15. No

16. In progress.

17. Arnaud, J., et al. (2015), The Grotta Guattari mandibular remains in the Italian human evolutionary context: A morphological and morphometrical overlook of the Neanderthal jaw. *Quaternary International*, 388, 206-217. P; Ascenzi, A. (1991), Can the Circeo cranium yield information on the extinction of Würmian Neandertal humans? *Quaternaria Nova*, 1: 565-574. P; Bietti, A., Manzi, G. (1991), Proposal for a new denomination of the Monte Circeo hominids. In A. Bietti & G. Manzi (eds), *The Fossil Man of Monte Circeo. Fifty Years of Studies on the Neandertals in Latium*, 47-48. *Quaternaria Nova*, 1 (Proceedings of the homonymous symposium; Sabaudia, October 1989). P; Blanc, A.C. (1939), L’uomo fossile del Monte Circeo. Un cranio neandertaliano nella Grotta Guattari a San Felice Circeo. *Rivista di Antropologia*, 32: 1-18. P; Blanc, A.C.

(1958), Torre in Pietra, Saccopastore, Monte Circeo. On the position of the Mousterian of the Pleistocene sequence of the Rome area. In G.H.R. Von Koenisvald (ed.), *Hundert Jahre Neanderthaler*. Kholn-Graz: Bohlau, 167-174. A; Blanc, A.C. (1961), Some for the ideologies of early man. In S.L. Washburn (ed.), *The Social Life of Early Man*. Chicago: Aldine, 119-136. A; Blanc, A.C., Segre, A.G. (1953), *Excursion au Mont Circé*. *Livret-Guide du IV Congrès Int. INQUA*, Istituto Italiano di Paleontologia Umana, Roma. A; Borgognini Tarli, S., et al. (1991), L’allargamento del foro occipitale in Circeo 1. Riesame e discussione di un reperto problematico. In M. Piperno & G. Scichilone (eds), *Il Cranio Neandertaliano Circeo 1. Studi e Documenti; Museo “L. Pigorini”*, Roma, 423-456. P; Cardini, L. (1953*), In Excursion au Mont Circé. Livret-Guide du IV Congrès Int. INQUA*, Roma. A; Giacobini, G. (1991), Hyenas or cannibals: fifty years of debate on the Guattari Cave Neandertal cranium. *Quaternaria Nova, 1*: 593-604. P; Mallegni, F. (1991), Guattari 2 and 3: the stomatognatic apparatus. *Quaternaria Nova, 1*: 125-136. P; Manzi, G., Passarello, P. (1991), Anténéandertaliens et Néandertaliens du Latium (Italie Centrale). *L’Anthropologie*, 95: 501-522. P; Petronio, C., et al. (2021), Preliminary report on the new faunal remains from Grotta Guattari (late Pleistocene, San Felice Circeo, Latium). *BORNH Bulletin of Regional Natural History*, 1(4), 1-10. Z; Piccirilli, E., et al. (2023), New human teeth from the Neanderthal site of Guattari Cave (San Felice Circeo, Latium, Italy). *In 13th Annual ESHE Conference*. P; Piccirilli, E., et al. (2023), New human teeth from the Neanderthal site of Guattari Cave (San Felice Circeo, Latium, Italy). *In prep.* P; Piperno, M., Giacobini, G. (1991), A taphonomic study of the paleosurface of Guattari Cave (Monte Circeo, Latina, Italy). *Quaternaria Nova*, 1: 143-161. A; Rolfo, M.F., et al. (2023), Neanderthal bones collected by hyena at Grotta Guattari, central Italy, 66-65 ka: U/Th chronology and paleoenvironmental setting. *Quaternary Science Reviews*, 311, 108132. P, A, D; Rubini, M., et al. (2024), New horizons on the knowledge of the population during the Middle/Late Pleistocene. The human remains of Guattari Cave (San Felice Circeo, Latina, Italy), *preprint.* P; Schwarcz, H.P., et al. (1991), On the reexamination of Grotta Guattari: uranium-series and electron-spin-resonance dates. *Current Anthropology*, 32: 313-316. D; Segre, A.G. (1991), Geomorphologie et stratigraphie de la Grotte Guattari au Mont Circé (Latina). *Quaternaria Nova, 1*: 97-106. A, E; Sergi, S. (1954), La mandibola neandertaliana Circeo II. *Rivista di Antropologia*, 41: 305-344. P; Sergi, S., Ascenzi, A. (1955), La mandibola neandertaliana Circeo III (Mandibola B). *Rivista di Antropologia*, 42: 337-403. P; Sergi, S., et al. (1971), Italy. In K.P. Oakley, B.G. Campbell, & T.I. Molleson (Eds), *Catalogue of Fossil Hominids. Part II: Europe*. London: British Museum (Natural History). P; Stiner, M.C. (1991), The cultural significance of Grotta Guattari reconsidered. 1, The faunal remains from Grotta Guattari: a taphonomic perspective. *Current Anthropology*, 32: 103-117, 135-138. A, Z; Taschini, M. (1979), L’industrie lithique de Grotta Guattari au Mont Circé (Latium): définition culturelle, typologique et chronologique du Pontinien. *Quaternaria*, 21: 179-247. A; White, T.D.,Toth, N. (1991), The cultural significance of Grotta Guattari reconsidered. 2, The question of ritual cannibalism at Grotta Guattari. *Current Anthropology*, 32: 118-124, 135-138. A, P

18. The hypothesis that the cranium Guattari 1 was “probably a ritual burial” (Sergi et al., 1971) in relation to cannibalism (e.g. Blanc, 1958, 1961) was subsequently rejected on the basis of different analytical approaches (Borgognini Tarli et al., 1991; Giacobini, 1991; Stiner, 1991; White, Toth, 1991; for a different view, see Ascenzi, 1991).

Code data collected by: Caroling Röding, Andrew Kandel, Michael Bolus, Mateja Hajdinjak

1. **HOHLENSTEIN-STADEL**, Hohlenstein-Stadel Cave; Stadel-Höhle (des Hohlensteins); Hohlenstein; Hohlestein
2. Baden-Württemberg, Germany; 48°32’56” N, 10°10’23” E.
3. R. Wetzel’s team on 26.07.1937; first actual description probably Völzing in 1938.
4. Cave deposits.
5. No
6. Neanderthal remains from “schwarze Spitzenkultur” (lower black layer containing Mousterian artifacts, but many issues with correlating the fossil with the correct layer).
7.1 Mousterian.
7.2 Levallois.
7.3 Bone retouchers (n=3, Toniato et al. 2018).
7.4 No
7.5 No
7.6 No
7.7 No
8.1 Large mammals.
8.2 No
9.1 No
9.2 ESR dating of faunal bones (Kind et al., 2014): ETH_38798 43,852 – 43,072 cal. BP; ETH_38799 45,765 – 44,814 cal. BP; ETH_3880 44,580 – 43,643 cal. BP; ETH_41234 out of range for calibration (uncalibrated 46,440 +/-1050). ESR minimum ages based on herbivor teeth (Richards et al., 2020): HS02 37+/-6 ka; HS03 36 +/- 6 ka; HS04 33 +/- 5 ka.
9.3 Yes, MIS5 based on aDNA branch length (~124 ka with 95% confidence 62-183 ka) & Fauna (ca. 60-120 ka & 80-115 ka).
10. Hohlenstein-Stadel; Stadel; HST.
10.1 HST: presumably male (robusticity).
10.2 HST: adult (size & cortical thickness).
10.3 HST: R femur shaft (f).
10.4 –
10.5 –
11. Human remains: Landesamt für Bodendenkmalpflege Baden-Württemberg (unsure).
12. –
13. –
14.1 Bone (HST).
14.2 HST.
14.3 Stored at the Max Planck Institute for Evolutionary Anthropology, Leipzig, Germany.
14.4 http://cdna.eva.mpg.de/neandertal/; European Nucleotide Archive (PRJEB29475); GenBank (KY751400.2)
14.5 mtDNA; nuclear shotgun.
14.6 None
14.7 0-0.5X
14.8 Not applicable

14.9 M
14.10 –
15. No
16. No
17. Kunter, J., Wahl, J. (1992), Das Femurfragment eines Neandertalers aus der Stadel höhle des Hohlensteins im Lonetal. Fundberichte aus Baden-Württemberg 17/1, 111e124. P; Völzing, O (1938), Die Grabungen 1937 am Hohlestein im Lonetal. Markung Asselfingen Kr. Ulm. Fundber. Schwaben N.F. 9, 1935 – 1938. P; Peyrégne, S., et al. (2019), Nuclear DNA from two early Neandertals reveals 80,000 years of genetic continuity in Europe. *Science advances* 5(6), eaaw5873. G; Posth, C., et al. (2017), Deeply divergent archaic mitochondrial genome provides lower time boundary for African gene flow into Neanderthals. *Nature communications* 8(1), 16046. G; Richard, M., et al. (2020), The Middle to Upper Palaeolithic transition in Hohlenstein-Stadel cave (Swabian Jura, Germany): A comparison between ESR, U-series and radiocarbon dating. *Quaternary International* 556, 49-57. D; Kitagawa, K. (2014), *Exploring hominins and animals in the Swabian Jura: study of the Paleolithic fauna from Hohlenstein-Stadel* (Doctoral dissertation, Universität Tübingen). Z, A

Code data collected by: Jean-Luc Voisin

1. **HORTUS**, Ortus

2. Cave, near the village of Valflaunès, Hérault, France, 20 km North from Montpellier; 43°47'38" N, 3°49'47" E.

3. M. Gennevaux and A. Mauche between 1906-1908 (first excavations), many people carried out excavations and test pits; M.A. de Lumley and H. de Lumley between 1960 and 1964 (excavations).

4. Cave deposits.

5. No

6. 3 different cave locations: Grand fossé Est- Layer 9B: Hortus Xbis, XVIII, XXIX and XLVI; Layer 11A: Hortus X, XLII, XXI and XXII; Layer 13A: Hortus IX, XII, XLV, XXXIV, XXXV and XXXVIII; Layer 14: Hortus II, III, IV, VIII, XLVII, XIIbis, XIV, XVII, XX, XLIII, XLIV, XXIII, XXIV, XXV, XXVI, XXVII and XXVIII; Layer 16B: Hortus XI, XV and XL; Layer 19A: Hortus IV and XIX; Layer 22C: Hortus VII, XIII and XIIIbis. Grand fossé Ouest- Layer RG: Hortus XXXII ; Layer FR: Hortus XLVIII. Couloir- Layer OC: Hortus XXX, XXXI and XXXII; Layer SAGR: XXXVI, XXXVII and XLI; Layer RG: Hortus I, VI, XLIV and XXXIX

7.1 Mousterian.

7.2 Levallois.

7.3 No

7.4 No

7.5 No

7.6 No

7.7 No

8.1 Large and small mammals, birds.

8.2 No

9.1 No

9.2 No

9.3 Glacial phases, according to large mammal taxa.

10. Hortus I, Hortus Ibis, Hortus II, Hortus III, Hortus IV, Hortus V, Hortus VI, Hortus VII, Hortus VIII, Hortus IX, Hortus X, Hortus Xbis, Hortus XI, Hortus XII, Hortus XIIbis, Hortus XIII, Hortus XIIIbis, Hortus XIV, Hortus XV, Hortus XVI, Hortus XVII, Hortus XVIII, Hortus XIX, Hortus XX, Hortus XXI, Hortus XXII, Hortus XXIII, Hortus XXIV, Hortus, XXV, Hortus XXVI, Hortus XXVII, Hortus XXVIII, Hortus XXIX, Hortus XXX, Hortus XXXI, Hortus XXXII, Hortus XXXIII, Hortus XXXIV, Hortus XXXV, Hortus XXXVI, Hortus XXXVII, Hortus XXXVIII, Hortus XXXIX, Hortus XL, Hortus XLI, Hortus XLII, Hortus XLIII, Hortus XLIV, Hortus XLV, Hortus XLVI, Hortus XLVII, Hortus XLVIII, Hortus XLIX. MNI: 20.

10.1 –

10.2 Hortus I and Ibis: 0-7 months old, (dimension and thickness of bones); Hortus II: 6.5 to 7.9 years (perikymata count); Hortus III: 6.5 to 7.9 years (perikymata count); Hortus IV: around 20 years, (unerupted M3); Hortus XIIIbis, Hortus X, Hortus XI, Hortus XII, Hortus XIIbis, Hortus XIII: old adults (tooth wear); Hortus XXXIV: infant (femur size).

10.3 Hortus XLIX: occipital bone (ff) ; Hortus I: L parietal bone (f), Hortus Ibis: R parietal bone (f) (Hortus I and Ibis belong to the same individual); Hortus XLVII: the alveolar bone of an upper incisor (same individual as Hortus VIII); Hortus II: mandible (f) with

RC_1 and LP_3, L and RP_4, L and RdM_2, L and RM_1, L and RM_2 (Hortus II and III belong to the same individual); Hortus IV: mandible (ff) with R and LC_1, RP_3, L and RM_1, L and RM_2; Hortus XVII: R mandible (ff); Hortus XLVIII: cervical vertebra 1 (ff); Hortus XIX: lumbar vertebra (f); Hortus XX: R clavicle (f)*; Hortus XXIII: R 1st hand phalanx ray 4; Hortus XXIV: R 2nd hand phalanx ray 2; Hortus XXV: R 2nd hand phalanx ray 3; Hortus XXVI: R 1st hand phalanx ray 2; Hortus XXVII: R 1st hand phalanx ray 5; Hortus XXVIII: R 2nd hand phalanx ray 5. Hortus XXI: L humerus (ff); Hortus XXII: L and R humerus L and R (ff); Hortus XLIII: R radius (ff)*; Hortus XLIV: R radius (ff)*; Hortus XXIII: R proximal hand phalanx, ray 4 (f)*; Hortus XXVI: R proximal hand phalanx, ray 2 (f)*; Hortus XXVII: R proximal hand phalanx, ray 5 (f)*; Hortus XXIX: L proximal hand phalanx, ray 1 (d); Hortus XXX: L proximal hand phalanx, ray 1 (d); Hortus XXXI: R proximal hand phalanx, ray 1 (d); Hortus XXXII: L proximal hand phalanx, ray 1 (d); Hortus XXIV: R intermediate hand phalanx, ray 2 (f)*; Hortus XXV: R intermediate hand phalanx, ray 3 (f)*; Hortus XXVIII: R intermediate hand phalanx, ray 5(f)*; Hortus XXXIII: intermediate hand phalanx, ray V (d); Hortus XLVI: intermediate hand phalanx (d); Hortus XLV: L iliac bone (ff); Hortus XXXIV: L femur (ff); Hortus XXXV: L femur (ff); Hortus XXXIV: L femur (f); Hortus XL: R fibula (ff); Hortus XXXVI: L proximal foot phalanx, ray 1 (d); Hortus XXXVII: L proximal foot phalanx, ray 1 (f); Hortus XXXVIII: R intermediate foot phalanx, ray 3 (d); Hortus XLI: R intermediate foot phalanx, ray 2 (d). *Same young individual.

10.4 Hortus III: root of L and RdC', RC', L and RdM^2, LP^3, L and RP^4, L and RM^1, L and RM^2; Hortus V: LP_4, L and RM_1, L and RM_2, L and RM_3 (the M_2 and M_3 on the left are still connected by a piece of bone); Hortus VI: RP_3, LM_3; Hortus VII: L and RI^1, RI^2; Hortus VIII: L and RI^1, L and RI^2, L and RC', LP^4, RM^1 (same individual as Hortus XLVII); Hortus IX: RC', LI^1, LP^3; Hortus X: LI^1, RI^2 (same individual as Hortus XLII); Hortus XLII: LM^{2-3} (same individual as Hortus X); Hortus X bis: LP^4; Hortus XI: RI^2, RM^3 (same individual as Hortus XIV); Hortus XIV: M (ff)(same individual as Hortus XI); Hortus XII: LI^1, LP^4; Hortus XIIbis: RI^1, L and RI^2; Hortus XIIIbis: LP_4; Hortus XIV: RP^4; Hortus XV: RdI^1; Hortus XVI: tooth fragment; Hortus XVIII: I_{1-2} (ff).

10.5 –

11. Musée de Tautavel – Centre européen de préhistoire, Avenue Léon-Jean-Grégory, 66 720 Tautavel, France.

12. –

13. –

14.1 No

14.2 –

14.3 –

14.4 –

14.5 –

14.6 –

14.7 –

14.8 –

14.9 –

14.10 –

15. No

16. No

17. de Lumley-Woodyear H. (1971), Le Paléolithique inférieur et moyen du Midi méditerranéen dans son cadre géologique. Tome II. Bas-Languedoc – Roussillon – Catalogne. *Gallia préhistoire*. Suppléments 5-2, 443. https://www.persee.fr/doc/galip_0072-0100_1971_sup_5_2. A, Str; de Lumley M.A. (1973), Anténéandertaliens et néandertaliens du bassin méditerranéen occidental européen. *Etude Quaternaire* 2, 1-603. P, R; Estalrrich A., Rosas A. (2015), Division of labor by sex and age in Neandertals: an approach through the study of activity-related dental wear. *Journal of Human Evolution* 80, 51-63. https://doi.org/10.1016/j.jhevol.2014.07.007. P; L'Engle Williams F. et al. (2015), Dental microwear texture analysis of Neandertals from Hortus cave, France. *Comptes Rendus Palévol* 17 (8), 545–556. https://doi.org/10.1016/j.crpv.2018.04.003. P, R; L'Engle Williams F. et al. (2019), Neandertal mandibular molars from Hortus cave, France: a comparison of crown shapes using elliptical fourier analysis. *L'Anthropologie (Brno)* 57 (2), 115-126. https://doi.org/10.26720/anthro.19.03.05.1. P, R; L'Engle Williams F. et al. (2023), The diet of young Neandertals from France, Pech de l'Azé I and Hortus II, reconstructed using dental microwear texture analysis. *Bulletins et Mémoires de la Société d'Anthropologie de Paris* 35 (2), 12074 (18) P; Piveteau J. et al. (1963), Découverte de restes néanderthaliens dans la grotte de l'Hortus (Valflaunès, Hérault). *Comptes Rendus Hebdomadaire de l'Académie des Sciences* 256, 40-44. P; Ramirez Rozzi F. (2005), Âge au décès de l'enfant néandertalien de l'Hortus. *Bulletins et mémoires de la Société d'Anthropologie de Paris* 17 (1-2), 47-55. https://doi.org/10.4000/bmsap.911. P, R

18. Possible cannibalistic practices noted on some bones.

Code data collected by: Katerina Harvati, Carolin Röding, Paraskevi Elefanti

1. **KALAMAKIA**, Kalamakia Cave
2. Laconia, Mani Peninsula, Peloponnese, Greece; 36°40'44" N, 22°22'12" E.
3. H. De Lumley amd A. Darlas 1993 (first excavations).
4. Cave deposits.
5. No
6. Unit III; Unit IV; Unit IV top.
7.1 Mousterian (units III-IV).
7.2 Flake (Unit III-IV), Levallois (unit III-IV); Scrapers (Unit III-IV).
7.3 No
7.4 No
7.5 Yes (unit IV).
7.6 No
7.7 Hearths (Unit III-IV).
8.1 Large mammals; small mammal; reptile; birds.
8.2 Pollen: trees (Pinus and mesophilic species (*Quercus t. pedunculata-pubescens*, *Fraxinus, Carpinus t. betulus*)) gradually being replaced by the herbaceous and some Mediterranean presteppic forest taxa (*Artemisia,* other Asteraceae representatives, *Quercus t. ilex-coccifera* and *Ephedra).*
9.1 No
9.2 Marine shell, U-Th, Unit II (sample IPH Kal9304), 109 +14/- 13 (ka BP), de Lumley et al., 1994; Charcoal, C-14, Unit IV (sample GfA94592), >39, Darlas and Psathi, 2016; Coprolite, C-14, Unit VI (sample Beta-245334), 22.410 +/- 0.12, Darlas and Psathi, 2016.
9.3 No
10. 14 human remains (Neandertal): KAL1 to KAL 14; MNI: 8-4.
10.1 –
10.2 Adult: 8x dental wear on permanent dentition: KAL 2,3,5,6,8,9,10,11; 1x cranial vault thickness and sutures: KAL1; 1x size (?): KAL7; 1x wear of articular facets: KAL14; Subadult: 2x ca. 6 years (deciduous dentition with root resorption and wear): KAL12,13; 1x 6-18 years (epiphysial fusion): KAL4.
10.3 KAL1: occipital bone (f); KAL4: lumbar vertebra (either L3 or L4) (d); KAL7: R fibula (f); KAL14: L naviculare (i).
10.4 KAL11: LI^{1}; KAL10: RI^{2}; KAL2: LP^{3}; KAL5: P^{4}; KAL6: LP_{4}; KAL9: RP_{4}; KAL3: LM^{3} (most probably third molar); KAL8: RM^{2} (most probably second molar); KAL12: LdI^{2}; KAL13: LdI^{1} (probably left).
10.5 KAL3: large hypoplastic defect.
11. Ephorate of Palaeoanthropology and Speleology (Hellenic Ministry of Culture), Ardittou 34b, 11636 Athens, Greece.
12. Paleoanthropology group, Eberhard-Karls University of Tübingen, Geschwister-Scholl-Platz, 72074 Tübingen, Germany.
13. No
14.1 No
14.2 –
14.3 –

14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No
17. Darlas, A., de Lumley, H. (1999), Palaeolithic research in Kalamakia Cave, Areopolis, Peloponnese. *British School at Athens Studies* 3, 293-302. A, Z, R, E; Douka, K., Spinapolice, E.E. (2012), Neanderthal Shell Tool Production: Evidence from Middle Palaeolithic Italy and Greece. *Journal of World Prehistory* 25, 45-79. A; Harvati, K., et al. (2013), New Neanderthal remains from Mani peninsula, Southern Greece: The Kalamakia Middle Paleolithic cave site. *Journal of Human Evolution* 64, 486-499. P; Lebreton, V., et al. (2008), Environnement végétal des néandertaliens de la Grotte de Kalamakia (Areopolis, Grece). In: A. Darlas, D. Mihailovic (Eds.), *The Palaeolithic of the Balkans*, vol. 1819, BAR (2008), 61-68. E; Darlas, A., Lumley, H. D. (2004), Kalamakia. *Bulletin de Correspondance Hellénique*, 128(21), 840-853. A, P, Z; Kolendrianou, M., et al. (2020), The Palaeolithic cave of Kalamakia (Mani Peninsula), Greece: new insights on the palaeoenvironment using microvertebrates and mesowear analysis of ruminant teeth. *Heliyon*, 6(5). E; Bauer, C. C., et al. (2018), Geometric morphometric analysis and internal structure measurements of the Neanderthal lower fourth premolars from Kalamakia, Greece. *Quaternary international*, 497, 14-21. P; De Lumley, H. D., et al. (1994), Grotte de Kalamakia (Aéropolis, Péloponnèse). *Bulletin de Correspondance Hellénique*, 118(2), 535-559. D, Z, R; Darlas, A., Psathi, E. (2016). The Middle and Upper Paleolithic on the western coast of the Mani Peninsula (southern Greece). In: Harvati, K., Roksandic, M. (Eds.), *Paleoanthropology of the Balkans and Anatolia: Human evolution and its context,* 95-117. A, Z, R, D; Karkazi, E., et al. (2024), Exploring aspects of Neanderthal mobility in the Mani Peninsula: Evidence from lithic raw material procurement and management at Kalamakia cave, Greece. *Journal of Archaeological Science*: Reports 55. https://doi.org/10.1016/j.jasrep.2024.104529. R

Code data collected by: Berkay Dinçer

1. **KARAIN CAVE**, Karain Mağarası, Karain E (Karain E gözü)
2. Türkiye, Antalya province, Yağca village; 37°4’40” N, 30°34’15” E.
3. İsmail Kılıç Kökten, 1946.
4. Cave deposits.
5. No
6. Geological unit I and II.
7.1 Karain type Mousterian (Zagros type Mousterian) (Unit III.2), Charantian (Unite III.3, III.4).
7.2 Levallois lineal and recurrent, Mousterian points, side scrapers.
7.3 No
7.4 No
7.5 Yes (not modified).
7.6 No
7.7 Firepleces and a possible structure (?)
8.1 Large mammals, small mammals, Birds, Reptile/Amphibians, Molluscs.
8.2 Not studied
9.1 –
9.2 Layer I.6/7, ESR, 100-130 ka; Layer III.1/2, ESR, 194-251 ka (animal teeth, Yaman 2015 for both).
9.3 MIS 5e/7 (lithic techno-typology).
10. One sample without a catalogue number (Chevalier et al. 2015).
10.1 –
10.2 Adolecsent/ young adult (bone morphology).
10.3 Femur (shaft, f).
10.4 –
10.5 –
11. Antalya Museum, Bahçelievler, Konyaaltı Cd. No:88, 07050 Muratpaşa/Antalya, Türkiye; Ankara University, Faculty of Language, History and Geography, Prehistory Departement, Hacettepe, 06100, Sıhhıye Kavşağı, 06430 Altındağ/Ankara, Türkiye.
12. –
13. –
14.1 No
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No

17. Kökten, İ. ...K. (1947), *Bazı Prehistorik Merkezler Hakkında Yeni Gözlemler*, Ankara Üniversitesi Dil ve Tarih-Coğrafya Fakültesi Dergisi, Cilt: V, Sayı: 2, 223-226. A; Chevalier T. et al. (2015), The endostructural pattern of a middle pleistocene human femoral diaphysis from the Karain E site (Southern Anatolia, Turkey), *American Journal of Physical Anthropology* 157(4): 648-58. P; Otte, M.et al. (1995), The Anatolian Middle Paleolithic: New Research at Karain Cave*, Journal of Anthropogical Research* 51(4), 287-299. A; Rink, W. J.et al. (1994), ESR Dating of the Last Interglacial Mousterian at Karain Cave, Southern Turkey*, Journal of Archaeological Science* 21, 839-849. D; Yalçınkaya, I., Özçelik, K. (2012), Karain Mağarası'nın Kültürel ve Çevresel Verileri Işığında Anadolu Orta Paleolitik'inin Değerlendirilmesi, *Adalya* XV, 1-12. A; Yaman, İ. D. (2015), Orta Paleolitik Dönem'de Karain Mağarası E Ve B Gözleri Arasındaki Bağlantı. *Adalya*, sy. 18: 16-51. A

Code data collected by: Omry Barzilai, Ella Been

1. **KEBARA**
2. Israel, Mount Carmel; 32°19'59" N, 34°33'40" E.
3. F. Turville-Petre 1932 (first excavations); M. Stekelis 1950s and 1960s; O. Bar-Yosef, L. Meignen and B. Vandermeerrsch 1980s.
4. Cave deposits.
5. Yes – Kebara 2 is a a burial of a nearly complete Neandertal skeleton, missing the cranium (Arensburg et al., 1985; Bar Yosef et al., 1992).
6. Units V–XIII (Middle Palaeolithic).

7.1 Mousterian.

7.2 Levallois, Expedient flake (Meignen and Bar-Yosef, 2019).

7.3 No

7.4 Yes – charred wood and plant remains (Lev et al. 2005).

7.5 No

7.6 No

7.7 Fireplaces – well defined conbustion fetures up to 1 m in diameter (Meignen et al. 2001, 2007; Goldberg et al. 2007).

8.1 Large medium and small size ungulates (Speth & Tchernov 2007).

8.2 Yes – charred cereals and legumes (Lev et al. 2005).

9.1 No

9.2 Burnt flint, TL, 59.5±3.5 ka to 48.3±3.5 ka BP, Units XII-VI, Valladas et al.1987. Tooth, ESR, 64/60±6 ka BP, Unit X, Schwarcz et al. 1989.

9.3 No

10. Kebara 1 infant skeleton; Kebara 2 nearly complete adult skeleton.

10.1 Kebara 2 – Male (based on: shape of the pelvis, robusticity of long bones).

10.2 Kebara 1 – Infant (aproximately 7 months old); Kebara 2- adult (25-35 years, based on: stage of bone ossification, a low percentage of osteoarthritis).

10.3 Kebara 2: mandible (i), hyoid (i), sternum (f), cervical vertebrae (C1-C7) (i), thoracic vertebrae (T1-T12) (i), Lumbar vertebrae L1-L5 (i), R an L ribs (1-12) (d), R and L clavicle (i), R and L scapula (d), R humerus (d) and L humerus (i), R and L ulna (i), R carpals (8 bones)(i) and L carpals (8 bones) (d), R metacarpals (5 bones) (i) and L metacarpals (4 bones) (d), R proximal phalanges (5 bones) (i) and L proximal phalanges (4 bones) (i); R middle phalanges (3 bones) (i) and L middle phalanges (i), R distal phalanges (5 bones) (i) and L distal phalanges (4 bones) (i); sacrum (d), R pelvis (i) and L pelvis (d), L femur (d).

10.4 R: I_1, I_2, C, P_3, P_4, M_1, M_2, M_3; L: I_1, I_2, C, P_3, P_4, M_1, M_2.

10.5 Endocostal ossification (ossification endocostale droite): proximal part of the fifth, sixth and seventh ribs on the right side of the ribcage, in the internal part of the rib, and close to the area between the articular tubercle and the costal angle (Duday and Arensburg, 1991); slight degenerative osteoarthritic changes in the vertebral spine, facet joint osteoarthritis is present in vertebrae C2/C3, T11 and T12 and L5–S1 (Duday and Arensburg 1991); an almost complete agenesis of the spinous processes on L2-L5; slight thoracolumbar scoliosis.

11. Human remains: Department of Anatomy and Anthropology, Faculty of Medicine, Tel Aviv University, P.O.B 39040, Ramat Aviv, Tel Aviv 69978, Israel.

12. The Institue of Arachaeology, the Hebrew University of Jerusalem, Mount Scopus, Jerusalem 9190501, Israel.
13. Spine and Thorax: https://figshare.com/articles/dataset/Kebara_2_spine_and_thorax_reconstruction_zip/7012256
14.1 No
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No
17. Arensburg, B., et al. (1985), Une sépulture néandertalienne dans la grotte de Kébara (Israël). Comptes-rendus des séances de l'Académie des sciences. *Série 2, Mécanique-physique, chimie, sciences de l'univers, sciences de la terre*, 300(6), 227-230. P; Bar-Yosef, O. (1998), The chronology of the Middle Paleolithic of the Levant. In: Akazawa, T., Aoki, K., Bar-Yosef, O. (Eds.) *Neandertals and modern humans in western Asia*. Plenum Press, New-York. 39-56; Bar-Yosef, O., et al. (1992), The excavations in Kebara Cave, Mt Carmel. *Current Anthropology* 33(5), 497– 550 A, P; Been, E., et al. (2010), Morphology and function of the lumbar spine of the Kebara 2 Neandertal. *American journal of physical anthropology* 142(4), 549-557. P; Duday, H., Arensburg, B. (1991), La pathologie, In: Bar-Yosef, O., Vandermeersch, B. (eds), *Le squelette moustérien de Kebara 2,* Paris, éditions du CNRS, 179-193. P; Goldberg, P., et al. (2007). Stratigraphy and geoarchaeological history of Kebara Cave. *Kebara Cave, Mt Carmel, Israel: The Middle and Upper Paleolithic Archaeology, Part I*, 49-84. Str.; Gómez-Olivencia, et al. (2018), 3D virtual reconstruction of the Kebara 2 Neandertal thorax. *Nat Commun* 9, 4387, https://doi.org/10.1038/s41467-018-06803-z P; Lev, E., et al. (2005), Mousterian vegetal food in Kebara cave, Mt. Carmel. *Journal of Archaeological Science* 32(3), 475-484. A; Meignen, L., et al. (2007), The hearths at Kebara Cave and their role in site formation processes. *Kebara Cave, Mt Carmel, Israel: The Middle and Upper Paleolithic Archaeology* Part I, 91-122. A; Meignen, L., Bar-Yosef, O. (2019), *Kebara Cave, Mt. Carmel, Israel, Part II: The Middle and Upper Paleolithic Archaeology*. Peabody Museum Press, Cambridge A; Rak, Y., Arensburg, B. (1987). Kebara 2 Neanderthal pelvis: first look at a complete inlet. *American Journal of Physical Anthropology* 73(2), 227-231, https://doi.org/10.1002/ajpa.1330730209 P; Schick, T., Stékélis, M. (1977), Mousterian assemblages in Kebara Cave, Mount Carmel. In: Stékélis, M., Arenseburg, B., Bar-Yosef, O., (Eds). *Eretz-Israël: archaeological, historical and geographical studies* 13, Israel Exploration Society, Jerusalem, 97-149. A; Schwarcz, H. P., et al. (1989), ESR dating of the Neanderthal site, Kebara Cave, Israel. *Journal of Archaeological Science* 16(6), 653-659. D; Speth, J. D., Tchernov, E. (2007). The Middle Paleolithic occupations at Kebara Cave: a faunal perspective. *Kebara Cave, Mt. Carmel, Israel. The Middle and Upper Palaeolithic*

Archaeology, Part I, 165e260. F; Turville-Petre, F. (1932), Excavations in the Mugharet el-Kebarah. *The Journal of the Royal Anthropological Institute of Great Britain and Ireland* 62, 271-276. A; Valladas, H., et al. (1987), Thermoluminescence dates for the Neanderthal burial site at Kebara in Israel. *Nature* 330(6144), 159-160, https://doi.org/10.1038/330159a0 D; Valladas, H., et al. (1998), Gif Labotatory Dates for Middle Paleolithic Levant. In: Akazawa T, Aoki K, Bar-Yosef O, (Eds.). *Neandertals and Modern Humans in Western Asia*. Plenum Press, New York. 69-75. D; Weiner, S., et al. (2007). Mineral distributions in Kebara Cave. Diagenesis and its effect on the archaeological record. *Kebara Cave, Mt Carmel, Israel: the Middle and Upper Paleolithic,* Part I, 131-146. A

18. Kebara 1 is an infant skeleton unearthed in 1965 during the final year of Stekelis' excavations in the northern sector of the cave, near the wall. Schick and Stekelis reported the discovery, stating that "at a depth of 6.83¬ 6.90 m, the skeleton of a seven-month-old child was found". Three stones and a rhinoceros tooth were found nearby. The intact removal of the skeleton was done within a mass of earth (Schick and Stekelis, 1977: 103). Unfortunately, no additional details regarding the circumstances of deposition or the information necessary for comprehending the original anatomical articulation of the corpse were documented. Nevertheless, given the preservation state of the skeleton found in an area utilized as a dumping zone, scholars have suggested that the infant might have been deliberately buried (Smith and Arensburg, 1977; Tillier, 2008). Kebara 2 is a nearly complete Neandertal skeleton, missing the cranium, the right lower limb and most of the left lower limb, found at the center of the cave. The skeleton belonged to a 25-30-year-old male with an estimated height of 174 cm. The specimen was found in a pit in a supine position with the right arm folded on the chest, and the left arm folded on the abdomen (Arensburg et al., 1985; Bar Yosef et al., 1992).

Code data collected by: Ivor Janković, Lia Vidas, Marko Banda, Fred H. Smith

1. **KRAPINA**, Hušnjakov brijeg, Hušnjakovo brdo, Špilja Hušnjakovo, Hušnjakovo
2. Town of Krapina, Krapinsko-zagorska county, Croatia, coordinates: 46°8'60" N, 15°51'36" E.
3. Dragutin Gorjanović-Kramberger 1899 – 1905.
4. Cave deposits.
5. No/Unclear.
6. Complex II (mousterian): geological units c9, c8, c7, c6, c5, c4, c3, c2, c1; layers 1-9.
7.1 Mousterian.
7.2 Major – Other (Core-wedge), Minor – Levallois.
7.3 Bone (modified eagle talons, Radovčić et al. 2015).
7.4 No
7.5 No
7.6 No
7.7 No
8.1 Large mammals, small mammals, birds, reptiles/amphibians, molluscs.
8.2 No
9.1 No
9.2 ESR (average 130 ± 10 ka BP) and U series on animal teeth. Sample 91187A, layer 9, ESR: 87 ± 7 ka BP, U series: 113 ± 10 ka BP; Sample 91183A, layer 7-8, ESR: 99 ± 5 ka BP, U series: 132 ± 5 ka BP; Sample 91186A, layer 5-6, ESR: 130 ± 3 ka BP, U series: 167 ± 10 ka BP; Sample 91185A, layer 1, ESR: 133 ± 5 ka BP, U series: 180 ± 15 ka BP (Rink et al. 1995 for all).
9.3 MIS 5e – warm interglacial taxa (e.g. Stephanorhinus kirchbergensis).
10. Krapina 1 (Cranium A), Krapina 2 (Cranium B), Krapina 3 (Cranium C), Krapina 4, Krapina 5 (Cranium D), Krapina 6 (Cranium E), Krapina 7 (Occ.1), Krapina 8 (Occ.2), Krapina 9 (Occ.3), Krapina 10 (Occ.4/Tp.32), Krapina 11 (Occ.5), Krapina 12 (Occ.6), Krapina 13 (Occ.7),Krapina 14 (Occ.8), Krapina 15 (1/15.2 C.O.1/C.O.2), Krapina16 (Pa.1), Krapina 17 (Pa.2/Tp.28), Krapina 18.1 (Occ.9), Krapina 18.2, Krapina 18.3 (Occ.11), Krapina 18.4, Krapina 18.5, Krapina 18.6, Krapina 18.7, Krapina 18.8, Krapina 18.9, Krapina 18.11, Krapina 18.12, Krapina 18.13, Krapina 18.14, Krapina 18.15, Krapina 18.16, Krapina 18.17, Krapina 18.18, Krapina 18.19, Krapina 18.20, Krapina 18.21, Krapina 18.22, Krapina 18.23, Krapina 18.24, Krapina 19 (Pa.3), Krapina 20 (Pa.4), Krapina 21 (Pa.5), Krapina 22 (Fr.1), Krapina 23 (Fr.2), Krapina 24 (Fr.3), Krapina 25 (Fr.4), Krapina 26 (Fr.5), Krapina 27 (Fr.6), Krapina 28 (Fr.7/To.9), Krapina 29 (Fr.8), Krapina 30 (Fr.9/To.12), Krapina 31 (Fr.10), Krapina 31.1, Krapina 31.2, Krapina 31.3, Krapina 31.4, Krapina 31.5, Krapina 31.6, Krapina 31.7, Krapina 31.8, Krapina 31.9, Krapina 31.10, Krapina 31.11, Krapina 31.12, Krapina 31.13, Krapina 31.14, Krapina 31.15, Krapina 31.16, Krapina 31.17, Krapina 32.1 (Pa.6), Krapina 32.2, Krapina 32.3, Krapina 32.4, Krapina 33.1, Krapina 33.2, Krapina 33.3/38.24.b, Krapina 33.4, Krapina 33.5, Krapina 33.6, Krapina 33.7/31.3, Krapina 33.8, Krapina 33.9, Krapina 33.10, Krapina 33.11, Krapina 33.12, Krapina 33.13, Krapina 33.14, Krapina 33.15, Krapina 33.16, Krapina 33.17, Krapina 33.18, Krapina 33.19, Krapina 33.20, Krapina 33.21, Krapina 33.22, Krapina 33.23, Krapina 33.24, Krapina 33.25, Krapina 33.26, Krapina 33.27, Krapina 33.28, Krapina 33.29, Krapina 33.30, Krapina 33.31, Krapina

33.32, Krapina 34.1, Krapina 34.2, Krapina 34.3, Krapina 34.4, Krapina 34.5, Krapina 34.6, Krapina 34.7, Krapina 34.8, Krapina 34.9, Krapina 34.10, Krapina 34.11, Krapina 34.12, Krapina 34.13, Krapina 34.14, Krapina 34.15, Krapina 34.16, Krapina 34.17, Krapina 34.18, Krapina 34.19, Krapina 34.20, Krapina 34.21, Krapina 34.22, Krapina 34.23, Krapina 34.24, Krapina 34.25, Krapina 34.26, Krapina 34.27, Krapina 34.28, Krapina 34.29, Krapina 34.30, Krapina 34.31, Krapina 34.32, Krapina 34.33, Krapina 34.34, Krapina 34.35, Krapina 34.36, Krapina 34.37, Krapina 35, Krapina 36, Krapina 37.1 (To.1), Krapina 37.2 (To.2), Krapina 37.3 (To.3), Krapina 37.4 (To.4), Krapina 37.5 (To.5), Krapina 37.6 (To.6), Krapina 37.7 (To.7), Krapina 37.8 (To.8), Krapina 37.9 (To.9), Krapina 37.10 (To.10), Krapina 37.11 (To.11), Krapina 37.12 (To.12), Krapina 37.13 (To.13), Krapina 37.14, Krapina 38.1 (Tp.2), Krapina 38.2 (Tp.7), Krapina 38.3 (Tp.9/20), Krapina 38.4 (Tp.11), Krapina 38.5 (Tp.12), Krapina 38.6 (Tp.13), Krapina 38.7 (Tp.4/22), Krapina 38.8 (Tp.15), Krapina 38.9 (Tp.19), Krapina 38.10 (Tp.20), Krapina 38.11 (Tp.22), Krapina 38.12 (Tp.23), Krapina 38.13 (Tp.24), Krapina 38.14 (Tp.25), Krapina 38.15 (Tp.26), Krapina 38.16 (Tp.27), Krapina 38.17 (Tp.28), Krapina 38.18 (Tp.29), Krapina 38.19 (Tp.30), Krapina 38.20 (Tp.39), Krapina 38.21 (Tp.16/40), Krapina 38.22 (Tp.41), Krapina 38.23 (Tp.43), Krapina 38.24, Krapina 38.24a (Tp.44), Krapina 38.25, Krapina 39.1 (Tp.1), Krapina 39.2 (Tp.3), Krapina 39.3 (Tp.4), Krapina 39.4 (Tp.5), Krapina 39.5 (Tp.6), Krapina 39.6 (Tp.8), Krapina 39.7 (Tp.10), Krapina 39.8 (Tp.16), Krapina 39.9 (Tp.17), Krapina 39.10 (Tp.18), Krapina 39.11 (Tp.19), Krapina 39.12 (Tp.21), Krapina 39.13 (Tp.31), Krapina 39.14 (Tp.32), Krapina 39.15 (Tp.33), Krapina 39.16 (Tp.34), Krapina 39.18 (Tp.36), Krapina 39.19 (Tp.37), Krapina 39.20 (Tp.38), Krapina 39.21, Krapina 39.22, Krapina 39.23, Krapina 39.24 (Tp.42), Krapina 39.25, Krapina 40.1 (Zy.1), Krapina 40.2 (Zy.2), Krapina 40.3 (Zy.3), Krapina 40.4 (Zy.4), Krapina 40.5 (Zy.5), Krapina 40.6 (Zy.6), Krapina 40.7 (Zy.7), Krapina 41 (P.zy.1), Krapina 42 (P.zy.2), Krapina 43 (Na.1), Krapina 44, Krapina 45 (Maxilla A, KDP 1), Krapina 45.1, Krapina 46 (Maxilla B, KDP 2), Krapina 46.1, Krapina 47 (Maxilla C, KDP 3), Krapina 48 (Maxilla D, KDP 4), Krapina 49 (Maxilla E, KDP 5), Krapina 50 (Maxilla F, KDP 6), Krapina 50.1, Krapina 50.2, Krapina 50.3, Krapina 51 (Mandible A, KDP 7), Krapina 52 (Mandible B, KDP 8), Krapina 53 (Mandible C, KDP 9), Krapina 54 (Mandible D, KDP 4), Krapina 55 (Mandible E, KDP 10), Krapina 56 (Mandible F, KDP 11), Krapina 57 (Mandible G, KDP 12), Krapina 58 (Mandible H, KDP 6), Krapina 59 (Mandible J, KDP 13), Krapina 60 (Mandible K, KDP 14), Krapina 61 (Mandible L), Krapina 62 (Mandible M), Krapina 63 (Ramus 1, KDP 15), Krapina 64 (Ramus 2, KDP 23), Krapina 65 (Ramus 3, KDP 10?), Krapina 66 (Ramus 4, KDP 16), Krapina 67 (Ramus 5, KDP 9), Krapina 68 (Ramus 6/14), Krapina 69 (Ramus 7), Krapina 70 (Ramus 8), Krapina 71 (Ramus 9), Krapina 72 (Ramus 10), Krapina 73 (Ramus 11), Krapina 74 (Ramus 12), Krapina 75 (Ramus 13), Krapina 76 (Ramus 14), Krapina 77 (Ramus 15), Krapina 78 (Ramus 16), Krapina 78.1 (level 4), individual teeth numbered from #1-#196, Krapina 98 (CA.1), Krapina 99 (CA.2), Krapina 100 (CA.3/4), Krapina 101 (CA.4), Krapina 101.1, Krapina 102 (CE.1), Krapina 103 (CE.2), Krapina 104 (CE.3), Krapina 105 (CE.4), Krapina 106, Krapina 107.1, Krapina 107.2, Krapina 107.3, Krapina 108, Krapina 109, Krapina 110, Krapina 111.1, Krapina 111.2, Krapina 111.3, Krapina 111.4, Krapina 111.5, Krapina 111.6, Krapina 111.7, Krapina 111.8a, Krapina 111.8b, Krapina 111.9, Krapina 111.10, Krapina 112.1, Krapina 112.2, Krapina 112.3, Krapina 112.4, Krapina 112.5, Krapina 112.6, Krapina 112.7, Krapina 113.1

(Th.1), Krapina 113.2 (Th.2), Krapina 113.3 (Th.3), Krapina 113.4 (Th.4), Krapina 114.1, Krapina 114.2, Krapina 114.3, Krapina 114.4, Krapina 114.5, Krapina 114.6, Krapina 114.7, Krapina 114.8, Krapina 114.9, Krapina 114.10, Krapina 114.11, Krapina 114.12, Krapina 114.13, Krapina 114.14, Krapina 115.1 (L.1), Krapina 115.2 (L.2), Krapina 115.3 (L.3), Krapina 115.4 (L.4), Krapina 115.5 (L.5), Krapina 115.6 (L.6), Krapina 115.7 (L.7), Krapina 115.8, Krapina 115.9, Krapina 115.10, Krapina 116.1, Krapina 116.2, Krapina 116.3, Krapina 116.4, Krapina 116.5, Krapina 116.6, Krapina 116.7, Krapina 116.8, Krapina 116.9, Krapina 116.10, Krapina 116.11, Krapina 116.12, Krapina 116.13, Krapina 116.14, Krapina 116.15a, Krapina 116.15b, Krapina 116.16, Krapina 117, Krapina 117.1, Krapina 117.2, Krapina 117.3, Krapina 118.1, Krapina 118.2, Krapina 118.3, Krapina 118.4, Krapina 119, Krapina 120.1, Krapina 120.2, Krapina 120.3, Krapina 120.4, Krapina 120.5, Krapina 120.6, Krapina 120.7, Krapina 120.8, Krapina 120.9, Krapina 120.10, Krapina 120.11 (Level 4), Krapina 120.12, Krapina 120.13, Krapina 120.14, Krapina 120.15, Krapina 120.17, Krapina 120.18, Krapina 120.19, Krapina 120.23, Krapina 120.24, Krapina 120.28, Krapina 120.29, Krapina 120.30, Krapina 120.31, Krapina 120.32, Krapina 120.33, Krapina 120.34, Krapina 120.35, Krapina 120.36, Krapina 120.37, Krapina 120.38, Krapina 120.39, Krapina 120.40, Krapina 120.41, Krapina 120.42, Krapina 120.43, Krapina 120.44, Krapina 120.45, Krapina 120.46, Krapina 120.47, Krapina 120.48, Krapina 120.49, Krapina 120.50, Krapina 120.51, Krapina 120.52, Krapina 120.53, Krapina 120.54, Krapina 120.55, Krapina 120.56, Krapina 120.57, Krapina 120.58, Krapina 120.59, Krapina 120.60, Krapina 120.61, Krapina 120.62, Krapina 120.63, Krapina 120.64, Krapina 120.65, Krapina 120.66, Krapina 120.67, Krapina 120.68, Krapina 120.69, Krapina 120.70, Krapina 120.71, Krapina 120.72, Krapina 121 (Sc.I), Krapina 122 (Sc.II), Krapina 123 (Sc.III), Krapina 124 (Sc.IV/XX), Krapina 125 (Sc.V), Krapina 126 (Sc.VI), Krapina 127 (Sc.VII), Krapina 128 (Sc.VIII), Krapina 129 (Sc.IX/XXI), Krapina 130 (Sc.X), Krapina 131 (Sc.XI), Krapina 132 (Sc.XII), Krapina 133 (Sc.XIII), Krapina 134 (Sc.XIV), Krapina 135 (Sc.XV), Krapina 136 (Sc.XVI), Krapina 137 (Sc.XVII), Krapina 137.1, Krapina 138 (Sc.XVIII), Krapina 139. Krapina 140 (Sc.XX), Krapina 141 (Sc.XXI), Krapina 142 (Cl.1), Krapina 143 (Cl.2), Krapina 144 (Cl.3), Krapina 145 (Cl.4), Krapina 146 (Cl.5), Krapina 147 (Cl.6), Krapina 149 (Cl.8), Krapina 151 (Cl.10), Krapina 152 (Cl.11), Krapina 153 (Cl.12), Krapina 154 (Cl.13), Krapina 155 (Cl.14), Krapina 156 (Cl.15), Krapina 157 (Cl.16), Krapina 158 (Cl.17), Krapina 158.1, Krapina 159 (H.1), Krapina 160 (H.2), Krapina 161 (H.3), Krapina 162 (H.4), Krapina 163 (H.5), Krapina 164 (H.6), Krapina 165 (H.7), Krapina 166 (H.8), Krapina 167 (H.9), Krapina 168 (H.10), Krapina 169 (H.11), Krapina 170 (H.12), Krapina 171 (H.13), Krapina 172 (H.14), Krapina 173 (H.15), Krapina 174 (H.16), Krapina 175 (H.17), Krapina 176 (H.18), Krapina 177 (H.19), Krapina 178 (H.20), Krapina 178.1, Krapina 179 (U.1), Krapina 180 (U.2), Krapina 181 (U.3), Krapina 182 (U.4), Krapina 183 (U.5), Krapina 184 (U.6), Krapina 185 (U.7), Krapina 186 (U.8), Krapina 187 (U.9), Krapina 188 (U.10), Krapina 188.1, Krapina 188.2, Krapina 188.3, Krapina 188.4, Krapina 188.5, Krapina 188.6, Krapina 188.7, Krapina 188.8, Krapina 188.9, Krapina 189 (R.1), Krapina 190 (R.2), Krapina 191 (R.3), Krapina 192 (R.4), Krapina 193 (R.5), Krapina 194 (R.6), Krapina 195 (R.7), Krapina 196 (R.9), Krapina 197 (R.8), Krapina 198 (R.10), Krapina 199 (R.11), Krapina 199.1, Krapina 200, Krapina 200.1, Krapina 200.2, Krapina 201.1 (Mc.1), Krapina 201.2 (Mc2), Krapina 201.3 (Mc.3), Krapina 201.4 (Mc.4), Krapina 201.6 (Mc 6), Krapina

201.7, Krapina 202, Krapina 202.1, Krapina 202.2, Krapina 203.1, Krapina 203.2, Krapina 203.3, Krapina 203.4, Krapina 203.5, Krapina 204.1, Krapina 204.2, Krapina 204.3, Krapina 204.4, Krapina 204.5, Krapina 204.6, Krapina 204.7, Krapina 204.8, Krapina 204.9, Krapina 204.10, Krapina 204.11, Krapina 204.12, Krapina 205.1, Krapina 205.2, Krapina 205.3, Krapina 205.4, Krapina 205.5, Krapina 205.6, Krapina 205.7, Krapina 205.8, Krapina 205.9, Krapina 205.10, Krapina 205.11, Krapina 205.12, Krapina 205.13, Krapina 205.14, Krapina 205.15, Krapina 205.16, Krapina 205.17, Krapina 205.18, Krapina 205.19, Krapina 205.20, Krapina 205.21, Krapina 205.22, Krapina 205.23, Krapina 205.24, Krapina 205.25, Krapina 205.26, Krapina 205.27, Krapina 206.1, Krapina 206.2, Krapina 206.3, Krapina 206.4, Krapina 206.5, Krapina 206.6, Krapina 206.7, Krapina 206.8, Krapina 206.9, Krapina 206.10, Krapina 206.11, Krapina 206.12, Krapina 206.13, Krapina 207 (Cx.1), Krapina 208 (Cx.2), Krapina 209 (Cx.3/6), Krapina 210 (Cx.4), Krapina 211 (Cx.5), Krapina 212 (Cx.6), Krapina 213 (Fe.1), Krapina 214 (Fe.2), Krapina 215.1 (Pa.1), Krapina 215.2 (Pa.2), Krapina 215.3 (Pa.3), Krapina 215.4 (Pa.4), Krapina 215.5 (Pa.6), Krapina 216.1 (Pa.5), Krapina 216.2 (Pa.7), Krapina 216.3 (Pa.8), Krapina 216.4 (Pa.9), Krapina 216.5 (Pa.10), Krapina 216.6 (Pa.11), Krapina 216.7 (Pa.12), Krapina 216.8 (Pa.13), Krapina 216.9 (Pa.14), Krapina 216.10 (Pa.15), Krapina 216.11, Krapina 217 (Ti.1), Krapina 218 (Ti.2), Krapina 219 (Ti.3), Krapina 220 (Ti.4), Krapina 221 (Fi.1), Krapina 222 (Fi.2), Krapina 223 (Fi.3), Krapina 224 (Fi.4), Krapina 225 (Fi.5), Krapina 226 (Fi.6), Krapina 227 (Fi.7), Krapina 228 (Fi.8), Krapina 229 (Fi.9), Krapina 230 (Fi.10), Krapina 231 (Fi.11), Krapina 232 (Fi.12), Krapina 233 (Fi.13), Krapina 234 (Fi.14), Krapina 234.1, Krapina 234.2, Krapina 234.3, Krapina 234.4, Krapina 234.5, Krapina 235 (Ta.1), Krapina 236 (Ta.2), Krapina 237 (Ta.3), Krapina 238.1 (Ta.4), Krapina 238.2 (Ta.5/12), Krapina 238.3 (Ta.7), Krapina 238.4 (Ta.8), Krapina 238.5 (Ta.9), Krapina 238.6 (Ta.11), Krapina 239.1 (Ta.6), Krapina 239.2 (Ta.10), Krapina 239.3, Krapina 240 (Ca.1), Krapina 240.1, Krapina 240.2, Krapina 240.3, Krapina 241 (Na.1), Krapina 242 (Na.2), Krapina 243 (Cb.1), Krapina 244 (Cb.2), Krapina 245 (Mt.1), Krapina 246 (Mt.2), Krapina 246.1, Krapina 247.1 (Mt.3), Krapina 247.2 (Mt.4), Krapina 247.3 (Mt.5), Krapina 247.4, Krapina 248.1 (Mt.6), Krapina 248.2 (Mt.7), Krapina 248.3 (Mt.8), Krapina 248.4, Krapina 249.1 (Mt.9), Krapina 249.2 (Mt.10), Krapina 249.3 (Mt.11), Krapina 249.4 (Mt.12), Krapina 249.5, Krapina 249.6, Krapina 249.7, Krapina 250.1 (Ph.I.1), Krapina 250.2 (Ph.I.2), Krapina 250.3 (Ph.I.3), Krapina 250.4 (Ph.I.4), Krapina 250.5, Krapina 251.1, Krapina 251.2, Krapina 251.3, Krapina 252.1 (Ph.II.1), Krapina 252.2 (Ph.II.2), Krapina 252.3 (Ph.II.3), Krapina 252.4 (Ph.II.4), Krapina 253.1, Krapina 253.2, Krapina 253.3, Krapina 253.4, Krapina 253.5, Krapina 253.6, Krapina 253.7, Krapina 253.8, Krapina 253.9, Krapina 253.10, Krapina 253.11, Krapina 253.12, Krapina 253.13, Krapina 253.14, Krapina 253.15, Krapina 253.16, Krapina 253.17, Krapina 253.18, Krapina 254.1, Krapina 254.2, Krapina 254.3, Krapina 254.5, Krapina 254.6, Krapina 255.1, Krapina 255.3, Krapina 255.4, Krapina 255.5, Krapina 255.6, Krapina 255.7, Krapina 255.8, Krapina 255.9, Krapina 255.10, Krapina 257.1, Krapina 257.2, Krapina 257.3, Krapina 257.4, Krapina 257.5, Krapina 257.6, Krapina 257.7, Krapina 257.8, Krapina 257.9, Krapina 257.10, Krapina 257.11, Krapina 257.12, Krapina 257.13, Krapina 257.14, Krapina 257.15, Krapina 257.16, Krapina 257.17, Krapina 257.18, Krapina 257.19, Krapina 257.20, Krapina 257.21, Krapina 257.22, Krapina 257.23, Krapina 257.24, Krapina 257.25, Krapina 257.26, Krapina 257.27, Krapina 257.28, Krapina 257.29, Krapina

257.30, Krapina 257.31, Krapina 257.32, Krapina 257.33, Krapina 257.34, Krapina 257.35, Krapina 257.36, Krapina 257.37, Krapina 257.38, Krapina 257.39, Krapina 257.40, Krapina 257.41, Krapina 257.42, Krapina 257.43, Krapina 257.44, Krapina 257.45.

10.1 For sex assesment of selected specimens see Radovčić et al 1988 and Trinkaus 2016.

10.2 For assessment of age for individual specimens see Radovčić et al. 2016 for cranial and dental remains, and Trinkaus 2016 for postcranial remains.

10.3 Krapina 1 (Cranium A) partial calvarium with most of the frontal, anterior R and virtually all of the L parietal and a complete L temporal. This specimen includes parietal 34.9 and temporal 39.4 (f), Krapina 2 (Cranium B) cranium lacking the frontal, with most of the occipital, the posterior R parietal, smaller part of the L parietal. This specimen includes occipital 18.15 (f), Krapina 3 (Cranium C) cranium and partial face with the R frontal, portions of the R parietal, R temporal, fragments of the R sphenoid, a piece of the R nuchal plane. This specimen includes occipital 18.3, frontal 34.2 and possibly parietal 19 (f), Krapina 4 frontoparietal fragment. This specimen includes parietal 34.5 and frontal 37.13 (f), Krapina 5 (Cranium D) cranium with portions of the L and R parietals, large occipital portion, the R temporal with virtually all but the petrous portion and the occipitomastoid suture border. This specimen includes parietal 5, occipital 7, temporal 32.8, temporal 38.14, temporal 39.21 (f), Krapina 6 (Cranium E) cranium with the upper face including a L zygomatic without its temporal process, the entire supraorbital torus with some of the L and most of R frontal squama, most of the R parietal, R occipital. This specimen includes occipital 14, occipital 18.7, frontal 22, frontal 37.2, zygomatic 40.2 (f), Krapina 8 (Occ.2) L occipital fragment (f), Krapina 9 (Occ.3) L occipital fragment (f), Krapina 10 (Occ.4/Tp.32) L part of the cranial rear including occipital, parietal and temporal portions. This specimen includes temporal 39.14 (f), Krapina 11 (Occ.5) L occipital (ff), Krapina 12 (Occ.6) central and R portion of an occipital. This specimen includes 18.14 (ff), Krapina 13 (Occ.7) L occipital (f), Krapina 15 (1/15.2 C.O.1/C.O.2) L and R antimer occipital condyles with a small portion of adhering occiput enclosing the hyoglossal canal (f), Krapina 16 (Pa.1) L parietal (i), Krapina 17 (Pa.2/Tp.28) R parietotemporale with a complete parietal (f), Krapina 18.1 (Occ.9) L occipital fragment (f), Krapina 18.2 R occipital fragment (f), Krapina 18.3 (Occ.11) R nuchal plane fragment (ff), Krapina 18.4 R occipital fragment (ff), Krapina 18.5 L fragment of an occipital squama (ff), Krapina 18.6 R nuchal plane fragment (ff), Krapina 18.8 L occipital fragment (ff), Krapina 18.9 central occipital fragment (ff), Krapina 18.11 R nuchal plane fragment (ff), Krapina 18.12 L nuchal plane fragment (ff), Krapina 18.17 L nuchal plane fragment (ff), Krapina 18.18 R occipitoparietal fragment (ff), Krapina 18.19 R nuchal plane fragment, Krapina 18.20 occipital fragment (ff), Krapina 18.21 L occipital fragment (f), Krapina 18.22 L nuchal plane fragment (ff), Krapina 18.23 L asterionic fragment (ff), Krapina 18.24 occipital squama fragment (f), Krapina 19 (Pa.3) L parietal (d), Krapina 20 (Pa.4) L frontoparietal (f), Krapina 21 (Pa.5) R parietal fragment (f), Krapina 23 (Fr.2) central portion of a frontal with the nasofrontal suture. This specimen includes nasal bones 44) (f), Krapina 24 (Fr.3) R supraorbital fragment (ff), Krapina 25 (Fr.4) central portion of a frontal squama (ff), Krapina 26 (Fr.5) central portion of a frontal squama (ff), Krapina 27 (Fr.6) anterocentral portion of a frontal squama (ff), Krapina 28 (Fr.7/To.9) R frontal (f). Includes frontal 28 (Fr.7) and

37.9 (ff), Krapina 29 (Fr.8) L frontal squama fragment (ff), Krapina 30 (Fr.9/To.12) R frontal. Includes 37.12 (f), Krapina 31 (Fr.10) central frontal squama fragment (ff), Krapina 31.1 L lateral frontal squama fragment (ff), Krapina 31.2 R frontal squama fragment (ff), Krapina 31.4 L frontal fragment (ff), Krapina 31.5 R frontal fragment (ff), Krapina 31.6 frontal squama fragment (ff), Krapina 31.7 frontal squama fragment (ff), Krapina 31.8 R frontal squama fragment (ff), Krapina 31.9 frontal squama fragment (ff), Krapina 31.10 L frontoparietal fragment (ff), Krapina 31.11 frontal squama fragment (ff), Krapina 31.12 L frontal squama fragment (ff), Krapina 31.13 frontal squama fragment (ff), Krapina 31.14 frontal squama fragment (ff), Krapina 31.15 frontal squama fragment (ff), Krapina 31.16 frontal squama fragment (ff), Krapina 31.17 posterior frontal squama fragment (ff), Krapina 32.1 (Pa.6) L and R parietal fragments joined along the sagittal suture (f), Krapina 32.2 L and R parietal fragments (ff), Krapina 32.3 L and R parietal fragments (ff), Krapina 32.4 L and R parietal fragments (ff), Krapina 33.1 L parietal fragment (ff), Krapina 33.2 L parietal fragment (ff), Krapina 33.3/38.24.b L parietal fragment (ff), Krapina 33.4 L parietal fragment (ff), Krapina 33.5 L frontoparietal fragment (ff), Krapina 33.6 L frontoparietal fragment (ff), Krapina 33.7/31.3, Krapina 33.8 L parietal fragment (ff), Krapina 33.9 R parietal fragment (ff), Krapina 33.10 L frontoparietal fragment (ff), Krapina 33.11 R parietal fragment (ff), Krapina 33.12 L parietal fragment (ff), Krapina 33.13 R parietal fragment (ff), Krapina 33.14 R parietal fragment (ff), Krapina 33.15 L frontoparietal fragment (ff), Krapina 33.16 R parietal fragment (ff), Krapina 33.17 R frontoparietal fragment (ff), Krapina 33.18 L frontal fragment (ff), Krapina 33.19 L parietal (f), Krapina 33.20 R parietal fragment (ff), Krapina 33.21 R parietal fragment (f), Krapina 33.22 L parietal fragment (f), Krapina 33.23 L frontoparietal fragment (ff), Krapina 33.24 R asterionic region (ff), Krapina 33.25 R asterionic region (ff), Krapina 33.26 L frontoparietal fragment (ff), Krapina 33.27 L parietal fragment (ff), Krapina 33.28 L frontoparietal fragment (ff), Krapina 33.29 frontoparietal fragment (ff), Krapina 33.30 R frontoparietal fragment (ff), Krapina 33.31 L parietal fragment (ff), Krapina 33.32 L frontoparietal fragment (ff), Krapina 34.1 R parietal fragment (ff), Krapina 34.3 L parietal fragment (ff), Krapina 34.4 R parietal fragment (ff) , Krapina 34.6 L parietal fragment (ff), Krapina 34.7 R parietal fragment (ff), Krapina 34.8 L parietooccipital fragment (ff), Krapina 34.10 R parietal fragment (ff), Krapina 34.11 frontoparietal fragment (ff), Krapina 34.12 R parietal fragment (ff), Krapina 34.13 L parietal fragment preserving pterionic region (ff), Krapina 34.14 parietal fragment (ff), Krapina 34.15 R parietal fragment (ff), Krapina 34.16 R parietal fragment (f), Krapina 34.17 L parietal fragment (f), Krapina 34.18 L parietal fragment (ff), Krapina 34.19 parietal fragment (ff), Krapina 34.20 L parietal fragment (ff), Krapina 34.21 L parietal fragment (ff) , Krapina 34.22 L lambdoidal fragment (ff), Krapina 34.23 L parietal fragment (ff), Krapina 34.24 R parietal fragment (ff), Krapina 34.25 L parietal fragment (ff), Krapina 34.26 parietal fragment (ff), Krapina 34.27 R parietal fragment (ff), Krapina 34.28 L parietal fragment (ff), Krapina 34.29 R parietal fragment (ff), Krapina 34.30 L parietal fragment (ff), Krapina 34.31 L parietal fragment (ff), Krapina 34.32 L parietal fragment (ff), Krapina 34.33 L parietal fragment (ff), Krapina 34.34 L parietal fragment (ff), Krapina 34.35 R parietal fragment (ff), Krapina 34.36 parietal fragment (ff), Krapina 34.37 L parietal fragment (ff), Krapina 35 R frontal fragment (ff), Krapina 36 L parietal fragment (ff), Krapina 37.1 (To.1) L supraorbital torus (f), Krapina 37.3 (To.3) R

supraorbital torus (f), Krapina 37.4 (To.4) L supraorbital torus (f), Krapina 37.5 (To.5) L supraorbital torus (f), Krapina 37.6 (To.6) L supraorbital torus (f), Krapina 37.7 (To.7) L supraorbital torus (f), Krapina 37.8 (To.8) L supraorbital torus (f), Krapina 37.10 (To.10) R supraorbital torus (ff), Krapina 37.11 (To.11) R supraorbital torus (ff), Krapina 37.14 supraorbital torus (ff), Krapina 38.1 (Tp.2) R temporal (f), Krapina 38.3 (Tp.9/20) R temporal with a part of sphenoid portion. This specimen includes temporal 38.10, Krapina 38.4 (Tp.11) R temporal (f), Krapina 38.5 (Tp.12) R sphenotemporal fragment (ff), Krapina 38.6 (Tp.13) R sphenotemporal fragment (ff), Krapina 38.7 (Tp.4/22) R temporal (f). This specimen includes temporal 38.11 (f), Krapina 38.8 (Tp.15) R sphenotemporal fragment (ff), Krapina 38.9 (Tp.19) R temporal fragment (ff), Krapina 38.12 (Tp.23) R temporal fragment (ff), Krapina 38.13 (Tp.24) R posterior temporal (ff), Krapina 38.15 (Tp.26) R posterior temporal (ff), Krapina 38.16 (Tp.27) R posterior temporal (f), Krapina 38.18 (Tp.29) R posterior parietal (ff), Krapina 38.19 (Tp.30) L temporal fragment (ff, Krapina 38.20 (Tp.39) L petrosal (ff), Krapina 38.21 (Tp.16/40) R temporal. This specimen includes temporal 39.8 (f), Krapina 38.22 (Tp.41) R temporal (f), Krapina 38.23 (Tp.43) R pterionic region with temporal squama (ff), Krapina 38.24a (Tp.44) R temporal squama. This specimen includes 18.16 (ff), Krapina 38.25 R temporal (ff), Krapina 39.1 (Tp.1) L temporal with part of sphenoid (i), Krapina 39.2 (Tp.3) L temporal (f), Krapina 39.3 (Tp.4) L temporal-occipital fragment (f), Krapina 39.5 (Tp.6) L temporal (f), Krapina 39.6 (Tp.8) L temporal with partial sphenoid portion (f), Krapina 39.7 (Tp.10) L temporal (f), Krapina 39.9 (Tp.17) L mandibular fossa (ff), Krapina 39.10 (Tp.18) L sphenotemporal fragment (ff), Krapina 39.11 (Tp.19) L temporal fragment (ff), Krapina 39.12 (Tp.21) L temporal fragment (ff), Krapina 39.13 (Tp.31) L posterior temporal (ff), Krapina 39.15 (Tp.33) L temporal (f), Krapina 39.16 (Tp.34) L posterior temporal (ff), Krapina 39.18 (Tp.36) L petrosal (f), Krapina 39.19 (Tp.37) L petrosal fragment (ff), Krapina 39.20 (Tp.38) L petrosal (ff), Krapina 39.22 L petrosal fragment (ff), Krapina 39.23 L petrosal fragment (ff), Krapina 39.24 (Tp.42) pterion fragment consisting of parts of frontal, sphenoid, parietal and temporal squama (f), Krapina 39.25 L temporal squama (ff), Krapina 40.1 (Zy.1) L zygomatic (d), Krapina 40.3 (Zy.3) L zygomatic (d), Krapina 40.4 (Zy.4) L zygomatic (f), Krapina 40.5 (Zy.5) L zygomatic (f), Krapina 40.6 (Zy.6) R zygomatic (f), Krapina 40.7 (Zy.7) R zygomatic process (ff), Krapina 41 (P.zy.1) R zygomatic process (ff), Krapina 42 (P.zy.2) R zygomatic process (ff), Krapina 43 (Na.1) L and R nasal bones (f), Krapina 45 (Maxilla A, KDP 1) L maxillary fragment with dM (ff), Krapina 45.1 R palatal fragment with unerupted canine tooth (D89) (ff), Krapina 46 (Maxilla B, KDP 2) L and R maxilla with all deciduous teeth except dI^1 (d), Krapina 46.1 isolated fragment of maxilla (ff), Krapina 47 (Maxilla C, KDP 3) maxilla with L dm^2-M^2 erupting, an exposed RP^4, LP^4 (f), Krapina 48 (Maxilla D, KDP 4) L maxilla with P^4-M^2 (f), Krapina 49 (Maxilla E, KDP 5) anterior L maxilla with LI^2 and RP^4 (ff), Krapina 50 (Maxilla F, KDP 6) anterior palate with LI^1-C (ff), Krapina 50.1 fragment of palatal wall (ff), Krapina 50.2 L palatal fragment (ff), Krapina 50.3 L nasomaxillary fragment (ff), Krapina 51 (Mandible A, KDP 7) mandibular corpus extending from the RI_1 (in its crypt) to the L mesial dM_2 socket, LdC (NA.1) and LdM_1 (NA.2) are erupted, unerupted germs are LI_1 to LP_4, Krapina 52 (Mandible B, KDP 8) mandibular corpus extending from the unerupted RC to the LM_1, intact lingually but totally open labially/buccally so that the unerupted teeth preserved (LC and LP_3, LP_4) can

be seen numbered teeth in jaw: LdM_2 (K62), RI_1 (K74), unerupted LP_4 (K193) (f), Krapina 53 (Mandible C, KDP 9) mandible extending from the LP_3 socket to the R condylar neck (the condyle and the back of the ramus just below it are broken off) and including an intact base and a virtually complete alveolar margin (which is only broken away between the I_2 socket and the dM_2). On the R the erupted teeth are dM_2 -M_2, P_4 and a small M_3 germ are in their crypts and the I sockets remain. On the L there is only the I_2 and the sockets for the I_1, C and P_3; teeth: LdM_2 (D66), LdM_1 (D67), LI_1 (D73), LP_3 unerupted (D111), LI_2 (NC.1), RM_1 (NC.3), RM_2 (NC.4), Krapina 54 (Mandible D, KDP 4) symphysis and L mandible corpus to the M_2 position, with I_2-M_2 and the base of the central incisor socket. Includes LC (ND.2), LI_2 (ND.1), LP_3 (ND.3), LP_4 (ND.4), LM_1 (ND.5), LM_2 (K83) (f), Krapina 55 (Mandible E, KDP 10) symphysis and L mandibular corpus extending almost to gonion, including RI_1 to LM_2. Includes RM_2 (D10), RM_1 (D77), LM_3 unerupted (D106), RM_3 unerupted (D108), LI_1 (NE.2), LI_2 (NE.3), LC (NE.4), LP_3 (NE.5), LP_4 (NE.6), LM_1 (NE.7), LM_2 (NE.8) (f), Krapina 56 (Mandible F, KDP 11) symphysis and partial L mandible corpus, with P_4 and sockets from the mesial wall of the RC to most of the LM_2 socket. The base is intact but parts of the alveolar margin are broken. Teeth include RP_3 (D34), LP_4(NF. 1) (f), Krapina 57 (Mandible G, KDP 12) mandibular corpus extending from the L mental foramen at the M_1 root to the R gonion and with all the sockets from the L to the RP_4. Includes RM_1 (NG.1), RM_2 (NG.2), RM_3 (NG.3) (f), Krapina 58 (Mandible H, KDP 6) complete well preserved mandibular corpus with LI_1 (NH.1), LI_2 (NH.2), LC_1 (NH.3), LP_3 (NH.3.1), LP_4 (NH.4), LM_1 (NH.5), LM_2 (NH.6), LM_3 (NH.7), RI_1, RI_2, RC_1, RP_3, RP_4, RM_1, RM_2, RM_3 (d), Krapina 59 (Mandible J, KDP 13) virtually complete mandible lacking only the back of the R ramus behind the condyle, with a full dentition except for the LP_3 (lost premortem) and LM_3. includes LI_1(NJ.1), LI_2 (NJ.2), LC_1 (NJ.3), LP_4 (NJ.4), LM_1 (NJ.5), LM_2 (NJ.6), RM_3 (NJ.7), RI_1, lower RI_2, RC_1, RP_3, RP_4, RM_1, RM_2 (d), Krapina 60 (Mandible K, KDP 14) fragment of L mandible corpus and anterior ramus with sockets for M_2 and M_3. Includes LM_3 (D4) (f), Krapina 61 (Mandible L) L mandibular fragment (ff), Krapina 62 (Mandible M) L ramus fragment (ff), Krapina 63 (Ramus 1, KDP 15) complete R ramus broken just anterior to the lingual 2/3 of a M_3 crown (f), Krapina 64 (Ramus 2, KDP 23) R ramus from the posterior of the M3 socket, lacking condylar and coronoid processes (f), Krapina 65 (Ramus 3, KDP 10?) R ramus (f), possibly a part of Krapina 55 (Mandible E) (f), Krapina 66 (Ramus 4, KDP 16) L complete ramus and corpus (d), Krapina 67 (Ramus 5, KDP 9) superior ramus fragment. Likely the L side of Krapina 53 (Mandible C) (ff), Krapina 68 (Ramus 6/14) L ramus from the distal margin of the M_3 root (ff), Krapina 69 (Ramus 7) L central ramus fragment, from the distal border of the M_3 socket, lacking condylar and coronoid processes and all of the bone inferior to the mylohyoid foramen except at the buccinator crest and the anterior edge (f), Krapina 70 (Ramus 8) posterior portion of a R ramus with condyle (f), Krapina 71 (Ramus 9) posterior portion of a R ramus (ff), Krapina 72 (Ramus 10) R condyle and an adhering portion of the posterior ramus to the top of the mylohyoid foramen (ff), Krapina 73 (Ramus 11) R condylar process (ff), Krapina 74 (Ramus 12) L condylar process (ff), Krapina 75 (Ramus 13) L posterior ramus (ff), Krapina 77 (Ramus 15) L fragment of anterosuperior condylar process (ff), Krapina 78 (Ramus 16) L condylar process (f), Krapina 78.1 (level 4) inferior border of R mandibular ramus (ff), Krapina 98 (CA.1) C1 atlas articular facets and anterior arch (f),

Krapina 99 (CA.2) C1 atlas R facets and foramen transversarium (f), Krapina 100 (CA.3/4) C1 atlas L facets and foramen transversarium, posterior arch (f), Krapina 101.1 C? R articular facets (ff), Krapina 102 (CE.1) C2 axis (i), Krapina 103 (CE.2) C2 axis lacking spinous process tip (d), Krapina 104 (CE.3) C2 axis (i), Krapina 105 (CE.4) C2 axis C2 axis lacking spinous process (d), Krapina 106 C4 complete lacking spinous process (d), Krapina 107.1 C5 complete lacking spinous process (d), Krapina 107.2 C6 complete lacking spinous process (d), Krapina 107.3 C7 complete lacking spinous process (d), Krapina 108 C5 body, pedicles and facets (f), Krapina 109 C6 complete lacking spinous process (d), Krapina 110 C7 complete lacking spinous process tip and L lamina(d), Krapina 111.1 C3 body, pedicles and R facets (f), Krapina 111.2 C3-C4 body, R pedicle and R cranial facet (f), Krapina 111.3 C4-C5 body, Krapina 111.4 C3 R facets, pedicle and ventral lamina (f), Krapina 111.5 C5 R facets and partial R pedicle and lamina (f), Krapina 111.6 C7 partial body, pedicle facets and lamina (ff), Krapina 111.7 C7 L pedicle, facets and lamina (ff), Krapina 111.8a C5-C6 R facets, pedicle and lamina (ff), Krapina 111.8b C5-C6 L pedicle and facets (ff), Krapina 111.9 C5-C6 R facets, pedicle and lamina (ff), Krapina 111.10 C? fragment with cranial facets (ff), Krapina 112.1C6-C7 body with partial pedicles and L cranial facet (ff), Krapina 112.2 C5-C6 body with pedicle bases (ff), Krapina 112.3 C5-C6 eroded body (d), Krapina 112.4 C6-C7 eroded body (d), Krapina 112.5 C6-C7 R facets, pedicle and lamina (ff), Krapina 112.6C7 R facets and lamina (ff), Krapina 112.7 C6-C7 R facets and lamina (ff), Krapina 113.1 (Th.1) thoracic vertebral body, pedicles, cranial facets and lamina (f), Krapina 113.2 (Th.2) thoracic vertebral body, R and cranial facet (f), Krapina 113.3 (Th.3) T12 body with L pedicle, facets and lamina (f), Krapina 113.4, thoracic body (ff), Krapina 114.1(Th.4) T8 pedicle, facets, laminae and partial spinous process (ff), Krapina 114.2 T6 pedicles, facets, laminae and partial spinous process (ff), Krapina 114.3 T5 pedicles, facets, laminae and R transverse process (ff), Krapina 114.4 T10 laminae, caudal facets, and R cranial facet (ff), Krapina 114.5 T3 laminae, caudal facets, and L cranial facet and pedicle (ff), Krapina 114.6 T1 R lamina and facet, and L partial lamina (ff), Krapina 114.7 T2 laminae, partial caudal facets and spinous process base (ff), Krapina 114.8 T9-11 laminae and medial caudal facets (ff), Krapina 114.9 T1 L body, pedicle and cranial facet (ff), Krapina 114.10 T9-11 R body, pedicle and articular facets (ff), Krapina 114.11 thoracic vertebral R pedicle, costal facet and cranial articular facet (ff), Krapina 114.12 T9-12 R pedicle, costal facet and partial cranial facet (ff), Krapina 114.13 thoracic vertebral L pedicle, costal facet, cranial facet and lamina (ff), Krapina 114.14 thoracic vertebral R lamina with spinous process base (ff), Krapina 115.1 (L.1) L5? body with L pedicle and cranial facet (ff), Krapina 115.2 (L.2) L4/5 body with pedicle bases (ff), Krapina 115.3 (L.3) vertebral body (ff), Krapina 115.4 (L.4) L2-3 body, L pedicle and L cranial facet (ff), Krapina 115.5 (L.5) L3-4 L body, pedicle and cranial facet (ff), Krapina 115.6 (L.6) lumbar vertebral L partial body with pedicle (ff), Krapina 115.7 (L.7) L4 L body corner with pedicle and cranial facet (ff), Krapina 115.9 lumbar vertebral middle and R body with R pedicle base (ff), Krapina 115.10 L5 eroded body with R pedicle base (ff), Krapina 116.1 T12/L1 laminae, spinous process base and caudal facet (f), Krapina 116.2 T12 pedicles, laminae and articular facets (f), Krapina 116.3 L1-2 R pedicle, facets and lamina (ff), Krapina 116.4 L5 caudal facets and laminae (ff), Krapina 116.5 T12/L1 laminae and partial caudal facets (ff), Krapina 116.6 L1 pedicles, articular facets and laminae (ff), Krapina 116.7 L1 laminae and articular facets (ff), Krapina 116.8 lumbar vertebral R pedicle and cranial articular facet (ff), Krapina 116.9 L4? R body corner, pedicle and cranial articular facet (ff), Krapina 116.10 T12/L1 laminae, half of the caudal facets, spinous process base (f), Krapina 116.11L1-2 laminae and cranial edges of caudal facets (ff), Krapina 116.12 L1 L lamina and caudal articular facet (ff), Krapina 116.13 L3-4 R lamina and caudal articular facet (ff), Krapina 116.14 L1-2 L lamina and caudal articular facet (ff), Krapina 116.15a lumbar vertebral R pedicle and cranial articular facet (ff), Krapina 116.15b lumbar vertebral L pedicle and cranial articular facet (ff), Krapina 116.16 lumbar vertebral arch (ff), Krapina 11617 sacral dorsocaudal fragment (ff), Krapina 117 manubrium (f), Krapina 117.1 L 1st rib from tubercle to the distal curve (f), Krapina 117.2 R 1st rib from the mid-neck to the distal angle, with a damaged tubercle (f), Krapina 117.3 R 1st rib from the neck and tubercle to the beginning of the distal curve, Krapina 118.1 L 1st rib from the ventral neck and tubercle base to the beginning of the distal curve (f), Krapina 118.2 R 1st rib from the broken neck and eroded tubercle base to the distal curve (f), Krapina 118.3 L 1st rib from the damaged tubercle distally to proximal of the angle (f), Krapina 118.4 L 1st rib from the slightly distal of the tubercle, almost to the chondral end (f), Krapina 119 R 2nd rib from the tubercle around the angle (f), Krapina 120.1 L upper rib from the neck and abraded tubercles around the angle to the middle of the body (f), Krapina 120.2 L middle rib from the neck and abraded tubercles around the angle to the middle of the body (f), Krapina 120.3 L middle rib, neck, tubercle, and from the angle onto the body (f), Krapina 120.4 L middle or lower rib from the angle onto the body (f), Krapina 120.5 L middle or lower rib, distal tubercle, around the angle and including most of the body (f), Krapina 120.6 L upper rib; half of the neck with a damaged tubercle to the angle (ff), Krapina 120.7 R upper or middle rib, tubercle and adjacent neck (ff), Krapina 120.8 R 3rd or 4th rib, from the middle of the tubercle around the angle to the middle-distal body (ff), Krapina 120.9 R lower or middle rib, body from just distal of the angle almost to the chondral end (f), Krapina 120.10 4th or 5th R rib, angle and most of the body (f), Krapina 120.11 (Level 4) middle R rib, mid angle to mod body (ff), Krapina 120.12 R 3rd? rib, distal edge of tubercle around the angle to the mid-body (ff), Krapina 120.13 R 3rd? rib, angle and adjacent shaft (ff), Krapina 120.14 R middle rib, angle and adjacent shaft (ff), Krapina 120.15 L 5th rib shaft (ff), Krapina 120.17 R 3rd rib, angle with adjacent shaft (ff), Krapina 120.18 L 3rd rib, neck and tubercle to the angle (ff), Krapina 120.19 L 4th or 5th rib, neck and tubercle to the angle (ff), Krapina 120.23 3rd, 4th or 5th rib, from the tubercle almost to the angle (ff), Krapina 120.24 L upper rib, neck and tubercle almost to the angle (f), Krapina 120.28 R upper or middle rib (ff), Krapina 120.29 L upper or middle rib, angle and adjacent distal area (ff) , Krapina 120.30 R middle or lower rib, distal body section (ff), Krapina 120.31 upper or middle L rib, from the angle to around the body (ff), Krapina 120.32 R 2nd rib, from just distal of the tubercle, around the angle onto the body. Includes specimen 120.41 (ff), Krapina 120.33 L upper or middle rib, area of the angle (ff), Krapina 120.34 L 3rd, 4th or 5th rib, area between the tubercle and the angle (ff), Krapina 120.35 R lower rib, distal body (ff), Krapina 120.36 R upper or middle rib, section just distal of the angle (ff), Krapina 120.37 L upper or middle rib, area of the angle (ff), Krapina 120.38 3rd or 4th R rib section just distal to the angle (ff), Krapina 120.39

R rib, abraded tubercle to the angle (ff), Krapina 120.40 L 2nd rib, angle and body just distal of the angle (ff), Krapina 120.42 L 3rd? rib, proximal section of the body (ff), Krapina 120.43 R lower rib, proximal section of the body (ff), Krapina 120.44 R 2nd rib, section between the tubercle and the angle (ff), Krapina 120.45 R rib, section between the tubercle and the angle (ff), Krapina 120.46 L 2nd? rib, area of the angle, with inferior crest damage (ff), Krapina 120.47 L rib, distal angle area and body distal of the angle (ff), Krapina 120.48 R 3rd, 4th or 5th rib, proximal body section (ff), Krapina 120.49 R 9th or 10th rib, distal body section (ff), Krapina 120.50 R middle rib, middle body section (ff), Krapina 120.51 R upper or middle rib, middle body section (ff), Krapina 120.52 R lower or middle rib, middle body section (ff), Krapina 120.53 R 3rd, 4th or 5th rib, middle body section (ff), Krapina 120.54 R lower rib, middle body section (ff), Krapina 120.55 R upper or middle rib, middle body section (ff), Krapina 120.56 R 3rd, 4th, 5th or 6th rib, proximal half of the body (ff), Krapina 120.57 R middle rib, middle body section (ff), Krapina 120.58 middle or lower rib, distal section of the body (ff), Krapina 120.59 R lower rib, middle body section (ff), Krapina 120.60 R upper or middle rib, middle body section (ff), Krapina 120.61 R lower rib, distal body section (ff), Krapina 120.62 L upper rib, middle body section (ff), Krapina 120.63 L upper or middle rib, middle body section (ff) , Krapina 120.64 L 8th, 9th or 10th rib, middle and distal body section (ff), Krapina 120.65 L lower or middle rib, middle body section (ff), Krapina 120.66 L upper or middle rib, middle body section (ff), Krapina 120.67 L middle rib, proximal and middle body section (ff), Krapina 120.68 L upper rib, proximal and middle body section (ff), Krapina 120.69 L upper rib, middle body section (ff), Krapina 120.70 L middle rib, middle and distal body, Krapina 120.71 L rib fragment, Krapina 120.72 rib fragment (ff), Krapina 121 (Sc.I) R glenoid fossa and coracoid, axillary border, lateral spine base and supraglenoid notch (f), Krapina 122 (Sc.II) R glenoid fossa and coracoid, axillary border and lateral spine base (f), Krapina 123 (Sc.III) R glenoid fossa, axillary border and lateral spine base (f), Krapina 124 (Sc.IV/XX) L axillary border and lateral spine. Includes Krapina 140 (Sc.XX) (f), Krapina 125 (Sc.V) L glenoid fossa, axillary border, spine and supraspinous notch (f), Krapina 126 (Sc.VI) R caudal glenoid fossa, axillary border and lateral spine base (f), Krapina 127 (Sc.VII) R glenoid fossa, spine and axillary border (f), Krapina 128 (Sc.VIII) R caudal glenoid fossa, axillary border and lateral spine base (f), Krapina 129 (Sc.IX/XXI) R glenoid fossa, coracoid, cranial axillary border and lateral spine. Includes Krapina 141 (Sc.XXI) (f), Krapina 130 (Sc.X) L glenoid fossa, coracoid, axillary border, eroded spine, infraspinatus and supraspinatus surfaces (f), Krapina 131 (Sc.XI) L glenoid fossa, coracoid and lateral spine bases, cranial axillary border (ff), Krapina 132 (Sc.XII) R glenoid fossa, coracoid, axillary border and spine base close to vertebral border (ff), Krapina 133 (Sc.XIII) R glenoid fossa, coracoid and lateral spine base (ff), Krapina 134 (Sc.XIV) R dorsal glenoid fossa and cranial axillary border (ff), Krapina 135 (Sc.XV) R axillary border (ff), Krapina 136 (Sc.XVI) L metaphyseal glenoid fossa and coracoid, cranial axillary border (f), Krapina 137 (Sc.XVII) L separate pieces of the axillary border, spine and supraspinous notch (ff), Krapina 137.1 L axillary border section (ff), Krapina 138 (Sc.XVIII) L spine midsection (ff), Krapina 139 L dorsal glenoid fossa and spine (ff), Krapina 142 (Cl.1) R complete clavicle with abrasion to anterior acromial end (d), Krapina 143 (Cl.2) R largely complete clavicle, lacking the sternal end proxi-

mal of the costoclavicular facet and distally broken midway between the conoid tubercle and acromial end (f), Krapina 144 (Cl.3) R clavicle diaphysis, lacking the acromial end and the proximal end from distal to the costoclavicular facet (f), Krapina 145 (Cl.4) R proximal half of a clavicle with erosion to the sternal end (ff), Krapina 146 (Cl.5) R clavicle diaphysis lacking both articular ends (f), Krapina 147 (Cl.6) R proximal clavicle diaphyseal curvature with the complete sternal epiphyseal end (f), Krapina 149 (Cl.8) R mid proximal curvature to the acromial end (ff), Krapina 151 (Cl.10) L distal clavicle diaphyseal curvature with the conoid tubercle (ff), Krapina 152 (Cl.11) L clavicle midshaft section (ff), Krapina 153 (Cl.12) L clavicle diaphysis with an abraded conoid tubercle (ff), Krapina 154 (Cl.13) L clavicle diaphysis from mid-costoclavicular facet to the edge of acromial articulation (ff), Krapina 155 (Cl.14) L clavicle diaphysis with strong muscle markings from the mid-proximal curvature to the acromial flare (ff), Krapina 156 (Cl.15) L proximal clavicle from the costoclavicular facet to the deltoid tubercle (ff), Krapina 157 (Cl.16) L proximal clavicle shaft to the beginning of the deltoid tubercle, including all of the costoclavicular facet (ff), Krapina 158 (Cl.17) L clavicle distal end from the conoid tubercle to acromial end (ff), Krapina 158.1 R clavicular sternal end to distal of the costoclavicular area (ff), Krapina 159 (H.1) L distal diaphysis and epiphysis, missing the medial epicondyle and the lateral supracondylar crest (f), Krapina 160 (H.2) L distal diaphysis and epiphysis (ff), Krapina 161 (H.3) L distal diaphysis and epiphysis (ff), Krapina 162 (H.4) L distal epiphysis from the supraolecranon level (ff), Krapina 163 (H.5) L diaphysis from the distal deltoid tuberosity to the proximal olecranon fossa (ff), Krapina 164 (H.6) L humerus midshaft and distal section from the mid-deltoid tuberosity, lacking the lateral pillar, the lateral epicondyle, the lateral edge of the capitulum and the posterior surface of the medial epicondyle. The olecranon fossa is perforated (f), Krapina 165 (H.7) L distal humerus shaft from the mid-deltoid tuberosity and distal end (ff, Krapina 166 (H.8) L distal epiphysis from the supraolecranon level (ff), Krapina 167 (H.9) L diaphysis from deltoid tuberosity to supraolecranon level (ff), Krapina 168 (H.10), L diaphysis from surgical neck to distal lateral metaphysis (ff), Krapina 169 (H.11) R distal epiphysis missing the medial epicondyle (ff), Krapina 170 (H.12) R distal epiphysis (ff, Krapina 171 (H.13) R distal epiphysis and diaphysis, missing the medial epicondyle and lateral capitulum (f), Krapina 172 (H.14) R distal half of the diaphysis, distal epiphysis missing articulations (ff), Krapina 173 (H.15) R distal half of the diaphysis (ff), Krapina 174 (H.16) R lateral pillar with the lateral epicondyle, trochlea and capitulum (ff), Krapina 175 (H.17) R distal end (ff), Krapina 176 (H.18) R distal end (ff), Krapina 177 (H.19) R diaphysis from bicipital sulcus to proximal olecranon fossa (ff), Krapina 178 (H.20) R distal end with posterior surface of the olecranon fossa, medial pillar, and trochlea (ff), Krapina 178.1 R supraolecranon fragment (ff), Krapina 179 (U.1) L ulna shaft from the middle of the trochlear notch to the proximal end of the pronator quadratus crest, with complete coronoid process and radial notch (f), Krapina 180 (U.2) R ulna shaft from the coronoid process to the midshaft (ff), Krapina 181 (U.3) R proximal ulna end with coronoid process and radial facet (ff), Krapina 182 (U.4) L proximal ulna end from the middle of the trochlear notch, with the coronoid process and radial facet (ff), Krapina 183 (U.5) R proximal ulna (ff), Krapina 184 (U.6) L proximal ulna diaphysis, coronoid process and radial facet (ff), Krapina 185 (U.7) L coronoid process and radial facet (ff), Krapi-

na 186 (U.8) R proximal ulna diaphysis from the proximal brachialis tuberosity to midshaft (ff), Krapina 187 (U.9) L ulna shaft from the brachialis tuberosity to midshaft proximal of the pronator quadratus insertion (ff), Krapina 188 (U.10) L ulna diaphysis the brachialis tuberosity to midshaft (ff), Krapina 188.1 L ulna diaphysis from the brachialis tuberosity region posteriorly to just proximal of the pronator quadratus insertion (ff), Krapina 188.2 R middle and distal ulna diaphysis (ff), Krapina 188.3 R middle and proximal ulna diaphysis (ff), Krapina 188.4, R ulna midshaft section (ff), Krapina 188.5 L middle and distal ulna diaphysis (ff), Krapina 188.6 R midshaft section (ff), Krapina 188.7 ulna midshaft section (ff), Krapina 188.8 L proximal ulna diaphysis from just distal to the coronoid process to the approximate midshaft, retaining the brachialis tuberosity, base of the radial facet and distal end of the supinator crest (ff), Krapina 188.9 R proximal epiphyseal fragment (ff), Krapina 189 (R.1) R proximal radius end with most of the diaphysis (ff), Krapina 190 (R.2) R proximal radius end and diaphysis to midshaft (ff), Krapina 191 (R.3) R proximal radius end including the head, neck and radial tuberosity with anterolateral and posterior abrasion to the head (ff), Krapina 192 (R.4) R proximal radius end to the proximal end of the interosseus crest (ff), Krapina 193 (R.5) R head, neck and tuberosity, Krapina 194 (R.6) R radial head, neck and most of the radial tuberosity (ff), Krapina 195 (R.7) R proximal epiphyseal region, proximal diaphysis and partial diaphysis to near midshaft (ff), Krapina 196 (R.9) L proximal radius end with the head, only half the margin of which is intact, and neck to the proximal end of the radial tuberosity (ff), Krapina 197 (R.8) R radius ,partial head, neck and proximal tuberosity (ff), Krapina 198 (R.10) L radius, proximal neck to mid-distal diaphysis (ff), Krapina 199 (R.11) L radius, proximal neck to interosseous crest (ff), Krapina 199.1 R? radius with medial head (ff), Krapina 200 R capitate (i), Krapina 200.1 L scaphoid (i), Krapina 200.2 partial capitate (f), Krapina 201.1 (Mc.1) R metacarpal 2 (f), Krapina 201.2 (Mc2) L metacarpal 2 (f), Krapina 201.3 (Mc.3) L? metacarpal 2/3 (f), Krapina 201.4 (Mc.4) L metacarpal 5 (f), Krapina 201.6 (Mc 6) R metacarpal 2 (f), Krapina 201.7 R metacarpal 2 (f), Krapina 202 R proximal phalanx 1 (i), Krapina 202.1 R proximal phalanx 1 (d), Krapina 202.2 L? Proximal phalanx 1 (ff), Krapina 203.1 R phalanx 1 (i), Krapina 203.2 R phalanx 1 (i), Krapina 203.3 R phalanx 1 (i), Krapina 203.4 R phalanx 1 (i), Krapina 203.5 L phalanx 1 (f), Krapina 204.1 L? phalanx 4 (i), Krapina 204.2 R phalanx 3 (f), Krapina 204.3 L phalanx 4 (f), Krapina 204.4 R phalanx 4 (i), Krapina 204.5 R phalanx 3 (i), Krapina 204.6 L phalanx 2 (i), Krapina 204.7 R phalanx 2 (i), Krapina 204.8 R phalanx 2 (f), Krapina 204.9 R phalanx 4 (f), Krapina 204.10 phalanx 4? (f), Krapina 204.11 phalanx distal diaphyseal section (ff), Krapina 204.12 phalanx distal diaphyseal section (ff), Krapina 253.3 R proximal phalanx 1 (f), Krapina 205.1 phalanx 3-4 (i), Krapina 205.2 phalanx 3-4 (i) , Krapina 205.3 phalanx 3-4 (i), Krapina 205.4 phalanx 3-4 (i), Krapina 205.5 phalanx 3-4 (i), Krapina 205.6 phalanx 3-4 (i), Krapina 205.7 phalanx 3-4 (d), Krapina 205.8 phalanx 3-4 (f), Krapina 205.9 phalanx 3-4 (f), Krapina 205.10 phalanx 2 (d), Krapina 205.11 phalanx 2-4 (f), Krapina 205.12 phalanx 3-4 (i), Krapina 205.13 phalanx 3-4 (i), Krapina 205.14 phalanx 2 (i), Krapina 205.15 phalanx 2 (i), Krapina 205.16 phalanx 3-4 (f), Krapina 205.17 phalanx 2 (d), Krapina 205.18 Phalanx 2 (d), Krapina 205.19 phalanx 5 (i), Krapina 205.20 phalanx (i), Krapina 205.21 phalanx 5 (i), Krapina 205.22 phalanx 5 (i), Krapina 205.23 phalanx 5 (i), Krapina 205.24 phalanx 5 (i), Krapina 205.25 phalanx (d),

Krapina 205.27 phalanx 3-4 (f), Krapina 206.1 phalanx 2-4 (d), Krapina 206.2 phalanx 2-4 (i), Krapina 206.3 phalanx 2-4 (i), Krapina 206.4 phalanx 2-4 (d), Krapina 206.5 phalanx 2-4 (i), Krapina 206.6 phalanx 2-4 (i), Krapina 206.7 phalanx 5 (i), Krapina 206.8 phalanx 2-4 (i), Krapina 206.9 phalanx 2-4 (i), Krapina 206.10 phalanx 2-4 (i), Krapina 206.11 phalanx 2-4 (d), Krapina 206.12 phalanx 5 (i), Krapina 206.13 phalanx 5? (d); Krapina 207 (Cx.1) L ilium, ischium and acetabulum (f), Krapina 208 (Cx.2) R acetabulum, ischium and superior pubic ramus (f), Krapina 209 (Cx.3/6) R inferior ilium, acetabulum and superior pubic ramus. This specimen includes Krapina 212 (cx.6) (f), Krapina 210 (Cx.4) L ischial neck with inferior acetabulum (f), Krapina 211 (Cx.5) R dorsoinferior ilium with auricular surface and greater sciatic notch (f), Krapina 255.1 L ventroinferior ilium with iliac acetabulum (f), Krapina 255.3 L inferior ilium (f), Krapina 255.4 L ventroinferior ilium (f), Krapina 255.5 L dorsoinferior ilium with greater sciatic notch (f), Krapina 255.6 L ventrosuperior ilium piece (f), Krapina 255.7 R dorsolateral superior ischium with the superior ischial tuberosity (f), Krapina 255.8 L ventroinferior ilium with the superior acetabulum and anterior inferior iliac spine (f), Krapina 255.9 L ischium with inferior acetabulum, complete neck and most of the tuberosity (f), Krapina 255.10 L superior pubic ramus (f), Krapina 213 (Fe.1) L proximal femur (f, Krapina 214 (Fe.2) L proximal femur (f), Krapina 257.1 L proximal femoral diaphysis (f), Krapina 257.2 L? femoral midshaft to mid-proximal diaphyseal section (f), Krapina 257.4 L distal femoral posterior and medial diaphyseal section (f), Krapina 257.5 L proximal femoral lateral diaphysis (f), Krapina 257.6 R posterior femoral diaphyseal section (f), Krapina 257.7 femoral midshaft anterior diaphyseal section (f), Krapina 257.9 R? distal femoral diaphyseal section (ff), Krapina 257.10 femoral diaphyseal section (f), Krapina 257.11 R distal anterior femoral diaphysis (f), Krapina 257.14 R proximal femoral diaphysis and lesser trochanter base (f), Krapina 257.16 R distal posterior femoral diaphysis (f), Krapina 257.17 R? distal femoral diaphyseal section (f), Krapina 257.18 R proximal medial femoral diaphysis (f), Krapina 257.24 R? central femoral diaphyseal section (f), Krapina 257.26 R femoral midshaft and mid-proximal diaphyseal section (f), Krapina 257.29 L lateral proximal and middle femoral diaphysis. This specimen includes 257.29 (f), Krapina 257.31 R femoral neck (f), Krapina 257.32 L proximal femoral subtrochanteric diaphyseal section (f), Krapina 257.33 L mid-proximal femoral diaphyseal section (f), Krapina 257.34 femoral midshaft (f), Krapina 257.35 femoral mid-distal diaphysis (f), Krapina 257.36 small section of femoral diaphysis (ff), Krapina 257.37 L femoral medial condyle and intercondylar space (ff), Krapina 257.38 R partial femoral medial condyle (ff), Krapina 257.39 R partial femoral condyle (ff), Krapina 257.40 R femoral lateral condyle (ff), Krapina 257.41 L femoral diaphysis (f), Krapina 257.42 R proximal femoral diaphysis (f), Krapina 257.43 L distal anterior femur with most of the patellar facet (f), Krapina 215.1 (Pa.1) R patella (i), Krapina 215.2 (Pa.2) L patella (d), Krapina 215.3 (Pa.3) R patella (i), Krapina 215.4 (Pa.4) R patella (d), Krapina 215.5 (Pa.6) R patella (d), Krapina 216.1 (Pa.5) L patella (i), Krapina 216.2 (Pa.7) L patella (f), Krapina 216.3 (Pa.8) L patella (i), Krapina 216.4 (Pa.9) L patella (f), Krapina 216.5 (Pa.10) L anterior patellar surface and facets (f), Krapina 216.6 (Pa.11) R anterior patellar surface (f), Krapina 216.7 (Pa.12) L lateral part of patella (f), Krapina 216.8 (Pa.13) R patella (f), Krapina 216.9 (Pa.14) L anterior and superior patellar surfaces with partial facets (f), Krapina 216.10 (Pa.15), L patella,

lateral section (f), Krapina 216.11 L lateral halves of the anterior patellar surface with articular facets (f), Krapina 217 (Ti.1) L tibia, anterior diaphysis from tibial tuberosity to distal diaphysis (f), Krapina 218 (Ti.2) L distal tibial epiphysis with trochlear surface (f), Krapina 219 (Ti.3) R tibia, lateral half of the distal epiphysis (f), Krapina 220 (Ti.4) L tibia, proximal posterior diaphyseal section (f), Krapina 257.3 R tibia, anterior and medial proximal diaphyseal section (f), Krapina 257.8 R tibia, distal anterior shaft splinter (ff), Krapina 257.12 distal posterior tibial diaphyseal section (ff), Krapina 257.13 R tibia, distal anterior diaphysis (ff), Krapina 257.15 R tibia, proximal and middle diaphysis. This specimen includes 257.21 (f), Krapina 257.19 L tibia, anterior and medial mid-proximal diaphyseal section (f), Krapina 257.20 R tibia, posterior proximal diaphysis and most of the surfaces from midshaft distally. This specimen includes 257.23 (f), Krapina 257.22 R tibia, posterior midshaft section (f), Krapina 257.25 R tibia, proximal posterior diaphysis (f), Krapina 257.27 R tibia, anterior middle and distal diaphyseal portion (f), Krapina 257.28 L tibia, proximal anterior and lateral diaphyseal surfaces (f), Krapina 257.44 L tibia, middle and distal diaphyseal section (f), Krapina 257.45 (previous # 115.8) L tibia, medial tibial condyle (ff), Krapina 221 (Fi.1) R fibula, diaphysis (f), Krapina 222 (Fi.2) R fibula, diaphysis (f), Krapina 223 (Fi.3) R fibula, diaphysis (f), Krapina 224 (Fi.4) L fibula, neck to mid-distal diaphysis (f), Krapina 225 (Fi.5) R fibula, neck to mid-distal diaphysis (f), Krapina 226 (Fi.6) R fibula, distal diaphysis (f), Krapina 227 (Fi.7) R fibula, partial diaphysis (f), Krapina 228 (Fi.8) R fibula, diaphysis (f), Krapina 229 (Fi.9) L fibular diaphysis (f), Krapina 230 (Fi.10) L fibula, diaphysis (f), Krapina 231 (Fi.11) L fibular diaphysis (f), Krapina 232 (Fi.12) L fibula, diaphysis (f), Krapina 233 (Fi.13) L fibula, diaphysis (f), Krapina 234 (Fi.14) L fibula, distal diaphysis (f), Krapina 234.1 R fibula, distal diaphyseal section (f), Krapina 234.2 R fibula, proximal diaphysis to midshaft (f), Krapina 234.3 L fibula, proximal diaphysis to midshaft (f), Krapina 234.4 L fibula, two diaphyseal sections, proximal section with the neck (234.4a) and mid-proximal section (234.4b) (f), Krapina 234.5 R fibula, distal diaphysis and abraded distal epiphysis (f), Krapina 235 (Ta.1) L talus (i), Krapina 236 (Ta.2) L talus (i), Krapina 237 (Ta.3) R talus (i), Krapina 238.1 (Ta.4) L talar body (f), Krapina 238.2 (Ta.5/12) L lateral talar body with head and medial calcaneal surface. This specimen includes 238.7 (Ta12) (f), Krapina 238.3 (Ta.7) L lateral talar body (f), Krapina 238.4 (Ta.8) L talar head and anteromedial trochlea (f), Krapina 238.5 (Ta.9) L talar head and anterior trochlea (f), Krapina 238.6 (Ta.11) L talar head and medial malleolar facet (f), Krapina 239.1 (Ta.6) R talar head and anterior trochlea (f), Krapina 239.2 (Ta.10) R talar anteriolateral body with lateral head and neck (f), Krapina 239.3 R talar lateral body section (f), Krapina 240 (Ca.1) L calcaneus with talar articular facets and sustentaculum tali (f), Krapina 240.1 R calcaneus with talar articular facets, sustentaculum tali, partial body and dorsal cuboid facet (f), Krapina 240.2 L anterolateral calcaneus with anterior talar and cuboid facets (f), Krapina 240.3 R calcaneus preserving medial tuberosity and medial body (f), Krapina 241 (Na.1) R navicular body (f), Krapina 242 (Na.2) L navicular body with central talar facet and dorsal cuneiform facets (f), Krapina 243 (Cb.1) R cuboid (i), Krapina 244 (Cb.2) L cuboid (f), Krapina 245 (Mt.1) R metatarsal 1 (i), Krapina 246 (Mt.2) L metatarsal 1 (f), Krapina 246.1 R metatarsal 2 (f), Krapina 247.1 (Mt.3) R metatarsal 3 (f), Krapina 247.2 (Mt.4) R metatarsal 2? (f), Krapina 247.3 (Mt.5) L metatarsal 3 (f), Krapina 247.4 L metatarsal 3 (ff), Krapina 248.1 (Mt.6) L

metatarsal 4 (i), Krapina 248.2 (Mt.7) L metatarsal 4 (i), Krapina 248.3 (Mt.8) R metatarsal 4 (d), Krapina 248.4 (R metatarsal 4 (f), Krapina 249.1 (Mt.9) R metatarsal 5 (i), Krapina 249.2 (Mt.10) L metatarsal 5 (f), Krapina 249.3 (Mt.11) R metatarsal 5 (f), Krapina 249.4 (Mt.12) L metatarsal 5 (f), Krapina 249.5 L metatarsal 5 (f), Krapina 249.6 L metatarsal 5 (f), Krapina 249.7 L metatarsal 5 (f), Krapina 250.1 (Ph.I.1) R proximal 1st phalanx (i), Krapina 250.2 (Ph.I.2) L proximal 1st phalanx (i), Krapina 250.3 (Ph.I.3) L proximal 1st phalanx (d), Krapina 250.4 (Ph.I.4) R proximal 1st phalanx (f), Krapina 250.5 proximal 1st phalanx (f), Krapina 251.1 L proximal 5th phalanx (i), Krapina 251.3 proximal phalanx 2-4 (previous # 205.26) (f), Krapina 253.1 R proximal 2nd phalanx (i), Krapina 253.2 R proximal 3rd phalanx (d), Krapina 253.4 L proximal 4th phalanx (i), Krapina 253.5 L proximal 4th phalanx (i), Krapina 253.6 L proximal 2nd phalanx (d), Krapina 253.7 L proximal 3rd phalanx (i), Krapina 253.8 L proximal 4th phalanx (d), Krapina 253.9 proximal 2-3rd phalanx (f), Krapina 253.10 R proximal 5th phalanx (d), Krapina 253.11 L proximal 4th phalanx (i), Krapina 253.12 R proximal 5th phalanx (d), Krapina 253.13 L proximal 5th phalanx (i), Krapina 253.14 L proximal 2-3rd phalanx (i), Krapina 253.15 L proximal 5th phalanx (d), Krapina 253.16 R proximal 3rd phalanx (i), Krapina 253.17 R proximal 2-3rd phalanx(f), Krapina 253.18 L proximal 2nd phalanx (f), Krapina 254.1 L middle 3-4 phalanx (i), Krapina 254.3 L? middle 2nd phalanx (d), Krapina 254.5 R middle 3rd phalanx (i), Krapina 254.6 R middle 4th phalanx (i), Krapina 251.2 L distal 5th phalanx (d), Krapina 252.1 (Ph.II.1) R distal 1st phalanx (i), Krapina 252.2 (Ph.II.2) L distal 1st phalanx (i), Krapina 252.3 (Ph.II.3) R distal 1st phalanx (d), Krapina 252.4 (Ph.II.4) L distal 1st phalanx (f), Krapina 254.2 R distal 4th phalanx (i).

10.4 #1 RM_2, #2 RM_2, #3 LM_2, #4 LM_3, #5 LM_3, #6 LM_2, #7 RM_3, #8 RM_3, #9 LM_3, #10 RM_2, #11 RdI_2, #12 RdI^2, #13 LdI_2, #14 RdI^2, #15 LdI^2, #16 RdI_2, #17 LdI^1, #18 LdI_1, #19 root, #20 root, #21 RdI^1, #22 LdC^1 (part of Mandible A), #23 RdC^1, #24 LdC^1, #25 RP_3, #26 RP_4, #27 LP_3, #28 RP_3, #29 RP_3, #30 RP_4, #31 RP_4, #32 LP_4, #33 LP_3, #34 RP_3, #35 RP_4, #36 RC^1, #37 LC^1, #38 RP^3, #39 RP^3, #40 LP^4, #41 LP^4, #42 RP^4, #43 LP^3, #44 RP^4, #45 LP^3, #46 RP^4, #47 RP^4, #48 RP^3, #49 LP^4, #50 LP^4, #51 RP^3, #52 LP^3, #53 RP^3, #54 LP^3, #55 RP^3, #56 RC^1, #57 RI^2, #58 RM^3, #59 RC^1, #60 RI^2, #61 C^1 root, #62 LdM_2 (part of Mandible B), #63 LdM_2, #64 LdM_2, #65 LdM_2, #66 LdM_2, #67 LdM_1, #68 RdM_2, #69 LI_2, #70 RI_1, #71 RI_2, #72 LI_1, #73 LI_1, #74 RI_1 (part of Mandible B), #75 RC_1, #76 RC^1, #77 RM_1, #78 LM_3, #79 RM_1, #80 RM_1, #81 LM_1, #82 LM_1, #83 LM_2 (part of Mandible D), #84 RM_1, #85 LM_3, #86 LM_2, #87 M, #88 RM_2, #89 C^1 (unerupted, part of Maxilla 45.1), #90 LI_2 (unerupted), #91 RI^1 (unerupted), #92 RI^1, #93 LI^1 (unerupted), #94 RI^1 (unerupted), #95 RI^2 (unerupted), #96 RM^2 (unerupted), #97 LM^3 (unerupted), #98 RM^2 (unerupted), #99 RM^3 (unerupted), #100 LM^1 (unerupted), #101 LM^1 (unerupted), #102 LC^1 (unerupted), #103 LC^1 (unerupted), #104 RM_2 (unerupted), #105 RM_1 (unerupted), #106 LM_3 (unerupted), #107 LM_2, #108 RM_3 (unerupted), #109 RM^3 (unerupted), #110 RP^3 (unerupted), #111 LP_3 (unerupted), #112 RP^3 (unerupted), #113 LP_4 (unerupted), #114 LP_3 (unerupted), #115 RP^4 (unerupted), #116 LP^3 (unerupted), #117 LP^4 (unerupted), #118 LP_4 (unerupted), #119 LC_1 (#149 germ, unerupted), #120 LC_1 (unerupted), #121 LC_1 (unerupted), #122 LI^2 , #123 LI^1, #124 RI^2 (part of Maxilla E), #125 LI^2, #126 RI^1, #127 RI^2, #128 RI^2, #129 RI^1, #130 RI^2, #131 RI^2, #132 RI^1, #133 LI^1, #134 RM^1, #135 LM^2, #136 LM^1, #137 LM^3, #138 LC_1, #139 LC^1, #140 RC^1, #141 RC^1, #142 LC^1, #143 RC_1, #144 LC^1, #145 RC_1, #146 LC^1,

#147 LC^{1}, #148 RI^{2}, #149 germ, #150 germ, #151 germ, #152 germ, #153 RI^{2}, #154 RI^{1}, #155 LI^{1}, #156 RI^{2}, #157 RI^{1}, #158 LI^{1}, #159 RI^{2}, #160 LI^{2}, #161 LM^{1} (part of Maxilla A), #162 RM^{3}, #163 RM^{3}, #164 LM^{1}, #165 RM^{2}, #166 RM^{2}, #167 RM^{1}, #168 LM$_{1}$, #169 RM^{2}, #170 RM^{3}, #171 RM^{1}, #172 RM^{2}, #173 LM^{3}, #174 RM^{1}, #175 LM^{2}, #176 LM^{2}, #177 RR^{2}, #178 RM^{3}, #179 RM^{3}, #180 LM^{3}, #181 RdM^{1}, #182 RdM^{1}, #183 LdM^{1}, #184 LM^{1}, #185 LdM^{2}, #186 dM^{2}, #187 RdM^{2}, #188 RdM^{2}, #189 RdM^{2}, #190 RdM^{2}, #191 LC^{1} (unerupted), #192 LM^{2} (unerupted), #193 LP$_{4}$ (unerupted), #194 LI^{1} (unerupted), #195 RI^{1} (unerupted), #196 RI^{2} (unerupted).

10.5 For description of pathologies for individual specimens see Radovčić et al. 2016 for cranial and dental remains, and Trinkaus 2016 for postcranial remains.

11. Croatian Natural History Museum, Demetrova 1, 1000 Zagreb, Croatia.

12. –

13. –

14.1 No

14.2 –

14.3 –

14.4 –

14.5 –

14.6 –

14.7 –

14.8 –

14.9 –

14.10 –

15. No

16. No

17. Gorjanović-Kramberger, D. (1906), *Der Diluviale Mensch von Krapina in Kroatien.* C. W. Kreidel Verlag, Wiesbaden. P, A, Z; Malez, M. (1970), Neue Ansichten über die Stratigraphie der Fundstelle von Krapina. *Krapina 1899-1969: referati održani na Naučnom skupu prigodom 70-godišnjice otkrića krapinskih praljudi u Zagrebu*, dne 31. svibnja 1969, 34-39. P, A, Z; Malez, M. (1978), Stratigraphische, paläofaunistische und paläolithische Verhältnisse des Fundortes Krapina. *Krapinski Pračovjek i Evolucija Hominida: zbornik predavanja održanih na Znanstvenom skupu "Krapinski pračovjek i evolucija hominida" u Krapini dne 17. rujna 1976*, Izdavački Zavod Jugoslavenske Akademije, Zagreb. P, A, Z; Smith, F. H. (1976). *The Neanderthal remains from Krapina: A descriptive and comparative study*. University of Michigan. P; Wolpoff, M. H. (1979), The Krapina dental remains. *American Journal of Physical Anthropology* 50(1), 67-113. P; Malez, M., Malez, V. (1989), The Upper Pleistocene Fauna from Neanderthal Man Site in Krapina (Croatia, Yugoslavia). *Geološki vjesnik* 42, 49-57. Z; Miracle, P. T., (2007), *The Krapina Paleolithic site: Zooarchaeology, taphonomy, and catalog of the faunal remains*. Croatian Natural History Museum, Zagreb. Z; Radovčić, J., et al. (1988), *The Krapina Hominids: An Illustrated Catalog of Skeletal Collection*. Croatian Natural History Museum, Zagreb. P; Radovčić, D. et al. (2015), Evidence for Neandertal Jewelry: Modified White-Tailed Eagle Claws at Krapina. *PLOS ONE* 10, e0119802. A; Rink, W.J. et al. (1995), ESR ages for Krapina hominids. *Nature* 378, 24-24. D; Simek, J.F. (1991), Stone Tool Assemblages from Krapina (Croatia, Yugoslavia). *Raw Material Economies Among Prehistoric Hunter-*

Gatherers 19, 59-71. A, R; Simek, J.F., Smith, F.H. (1997), Chronological changes in stone tool assemblages from Krapina (Croatia). *Journal of Human Evolution* 32, 561-575. A; Trinkaus, E. (2016), *The Krapina human postcranial remains: Morphology, morphometrics and paleopathology.* FF Press, Zagreb. P; Wood, B. (2011), *Wiley-Blackwell Encyclopedia of Human Evolution.* Wiley-Blackwell, Hoboken. P; Russell, M. D. (1987), Mortuary practices at the Krapina Neandertal site. *American Journal of Physical Anthropology* 72(3), 381-397. P, A; Trinkaus, E. (1985), Cannibalism and burial at Krapina. *Journal of Human Evolution* 14(2), 203-216. P, A.

18. For more detailed description and cranial and dental metrics of the Krapina specimens see Radovičić et al 1988. For more detailed description and metrics of postcranial specimens see Trinkaus 2016. Dental remains are numbered in order (from 1 to 196). Teeth inside jaws are not given individual numbers, except for #22 (inside Mandible A), #62 (inside Mandible B), #74 (inside Mandible B), #78 (inside Ramus 66), #83 (inside mandible D), #89 (inside Maxilla 45,1.), # 124 (inside Maxilla E), #140 (inside Maxilla F), #161 (inside Maxilla A), #193 (inside Mandible B), #194 (incorrectly in Maxilla C), #195 (incorrectly in Maxilla C), # 196 (incorrectly in Maxilla C). Dental remains that are inside jaws and don't have an individual number are not listed here but noted as a part of the numbered specimen (mandible or maxilla). For wear and preservation of teeth see Radovčić et al. 1988. Numerous specimens bear traces of cutmarks and/or breaking, or traces of burning (e.g. on Krapina 199.1, Krapina 257.36 etc.). Some scholars saw this as cannibalistic practice, while others argued for cultural practices (e.g. defleshing, secondary burial).

Code data collected by: Petr Škrdla

1. **KŮLNA CAVE**
2. Czech Republic, Moravian karst (northern part), Sloup, 49°24’27” N, 16°44’16” E.
3. (Wankeľ (1881), Kříž (1881 – 1886), Knies (1887, 1892, 1909 – 1913), Valoch (1961 – 1976).
4. Cave deposits.
5. No
6. Layer 7a.
7.1 Micoquian (layers 6-9), Taubachian (layers 10-13), Moustérian (layer 14).
7.2 Laminar/blade, Expedient/flake, Bifacial, discoid.
7.3 Bone retouchers.
7.4 No
7.5 No
7.6 Yes
7.7 No
8.1 Large mammal, small mammal.
8.2 Pollen analysis (Doláková 2002).
9.1 No
9.2 For layer 7a: C14: GrN 6024 38 690 + 950/- 800, GrN 6060 45 660 + 2850/- 2200 (Mook 1988), ESR: 50 000 ±5 000 (mean) (Rink et al. 1996), OSL: K0677 – 71.096±4.00, K0678 – 63.36±3.83 (Nejman et al. 2011).
9.3 Early MIS3, based on fauna and lithic techno-typology.
10. Kůlna I-V.
10.1 –
10.2 –
10.3 Kůlna I: partial maxilla, Kůlna II: partial parietal bone.
10.4 Kůlna III- V: one upper and two lower deciduous molars (Svoboda et al. 2020).
10.5 –
11. Moravian Museum, Zelný trh 6, 659 37 Brno, Czech Republic.
12. –
13. No
14.1 No
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No

17. Valoch, K., ed. (1988), Die Erforschung der Kůlna-Höhle 1961 – 1976. Anthropos 24 (N. S. 16), MZM Brno. A; Mook, W. G. (1988), Radiocarbon-Daten aus der Kůlna-Höhle. In: Valoch, K., (ed.), *Die Erforschung der Kůlna-Höhle 1961 – 1976*, 24 (N. S. 16), 285-286. MZM Brno. D; Jelínek, J. (1988), Anthropologische Funde aus der Kůlna-Höhle. In: Valoch, K., (ed.), *Die Erforschung der Kůlna-Höhle 1961 – 1976*, 24 (N. S. 16), 261-283. P; Musil, R. (1988) *Ökostratigraphie der Sedimente in der Kůlna-Höhle,* In: Valoch, K., (ed.), *Die Erforschung der Kůlna-Höhle 1961 – 1976*, 24 (N. S. 16), 215-256. Z, E; Rink, W., J. et al. (1996), ESR Dating of Micoquian Industry and Neanderthal Remains at Kulna Cave, Czech Republic. *Journal of Archaeological Science* 23, 6, 889-901. D; Nejman, L. et al. (2011), New Chronological Evidence For The Middle To Upper Palaeolithic Transition In The Czech Republic And Slovakia: New Optically Stimulated Luminescence Dating Results. *Archaeometry* 53:5, 1044-1066. DOI. 10.1111/j.1475-4754.2011.00586.x. D; Doláková, N. (2002), Palynologické studium sedimentů šošůvské části Sloupsko-šošůvských jeskyní a spodní části opěrného profilu v jeskyni Kůlna. *Acta Musei Moraviae, Sci. geol.* 87, 275-288. E

Code data collected by: Jean-Luc Voisin, Silvana Condemi

1. **LA CHAISE – ABRI BOURGEOIS-DELAUNAY**, Abri Bourgeaois-Delaunay; La Chaise (to be avoided because of the two other sites in this area).
2. Cave, near to the village of Vouthon, Charente, France, about 25 km East from Angoulême; 45°40'14" N, 0°26'46" E.
3. The cave was discovered in the mid-19th century, Abbés Bourgeois and Delaunay 1865 (excavations), P. David end of the 1930s until 1963 (excavations, not continuous), A. Debénath between 1967 and 1983 (excavations).
4. Cave deposits.
5. No
6. Layers 12 and 11.
7.1 Mousterian.
7.2 Mousterian La Ferrassie type.
7.3 No
7.4 No
7.5 No
7.6 No
7.7 Unclear.
8.1 Large mammals.
8.2 No
9.1 No
9.2 U-Th (not on human remains), Level 11: 151 000 +/- 15 000 years old, level 7: 101 000 +/- 12 000 years old (Blackwell et al., 1992).
9.3 Middle Palaeolithic- based on large mammals and lithic industries.
10. (in brackets, the numbers written on the bones) Bd 1, Bd 2, Bd 3, Bd 4, Bd 5, Bd 6, Bd 7, Bd 8, Bd 9 (I. 8/3), Bd 10 (J.9), Bd 11 (I. 8/9 (?)) Bd 12 (J. 8/XXIV), Bd 13 (I. 8/9), Bd 14 (I. 8/20), Bd 15 (J. 8/1), Bd 16 (J. 8/3), Bd 17a, Bd 17b, Bd 18, Bd 19 (J. 8/4), Bd 20, Bd 21, Bd 22, Bd 23, Bd24 (J4-C9). MNI: 5.
10.1 –
10.2 Bd 8: 15-17 years old (development of M3).
10.3 Bd 17a, Bd 17b: about 28 pieces glued together to form a calvaria (f); Bd 4: skull fragment (ff); Bd 6: occipital bone (f); Bd 7: R temporal bone (ff); Bd 22: R parietal bone (ff); Bd 8: L maxilla (ff) with M^1, M^2, M^3; Bd 23: R zygomatic bone (ff); Bd 1: mandible (f) with all the teeth; Bd 3: 6 rib fragments (ff); Bd 2: L scapula (ff); Bd 5: R femur (ff).
10.4 Bd 9 (I. 8/3): LP_3; Bd 10 (J.9): LI^2; Bd 11 (I. 8/9 (?)): RC'; Bd 12 (J. 8/XXIV): LI^1; Bd 13 (I. 8/9): LC_1; Bd 14 (I. 8/20): LP^4; Bd 15 (J. 8/1): RC'; Bd 16 (J. 8/3): RC'; Bd 18: LI_2; Bd 19 (J. 8/4): RC_1; Bd 20: LI_1, Bd 21: I (without any other information); Bd24 (J4-C9): LM_1.
10.5 –
11. Musée d'Angoulème, Square Girard II (rue Corneille), 16000 Angoulême, France.
12. Institut de Paléontologie Humaine, 1 rue René Panhard, 75013 Paris, France. Musée de l'Homme, Palais de Chaillot, 17 place du Trocadéro 75116 Paris, France. Premier Musée de Préhistoire de Tautavel, Avenue Leon Jean Gregory, 66720 Tautavel, France.; Grotte du Lazaret, 33 Bis Boulevard Franck Pilatte, 06300 Nice, France. Laboratory UMR PACEA 5199 – Universite de Bordeaux, Bâtiment B2, Allée Geoffroy Saint-Hilaire CS 50023, 33615 Pessac Cedex, France.

13. –
14.1 No
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No
17. Blackwell B., et al. (1983), Absolute dating of Hominids and Paleolithic artefacts of the cave of La Chaise-de-Vouthon (Charente), France. *Journal of Archaeological Science* 10 (6), 493-513. https://doi.org/10.1016/0305-4403(83)90033-X. D; Blackwell B., et al. (1992), ESR dating of tooth enamel: comparison with $^{230}Th/^{234}U$ spleleothem dates at La Chaise-de-Vouthon (Charente), France. *Quaternary Science Reviews*, 11, 231-234. https://doi.org/10.1016/0277-3791(92)90068-J. D; Condemi S. (2001), Les néanderthaliens de La Chaise, Éditions du Comité des Travaux Historiques et Scientifiques (CTHS), Documents préhistoire, n°15, 178. A, P, R; Delagnes A. (1992), *L'organisation de la production lithique au paléolithique moyen: approche technologique à partir de l'étude des industries de la Chaise-de-Vouthon, Charente*, PhD Université de Paris X. A; Debénath A., Piveteau J. (1969), Nouvelles découvertes de restes humains fossiles à La Chaise (abri Bourgeois Delaunay). *Comptes Rendus de l'Académie des Sciences de Paris- Série D – Sciences Naturelles* 269 (4), 24-28. P, R; Genet-Varcin E. (1974), Etude de dents humaines isolées provenant des grottes de la Chaise de Vouthon (Charente). *Bulletins et Mémoires de la Société d'Anthropologie de Paris* Série 13, Tome 1 (3), 373-384. https://doi.org/10.3406/bmsap.1974.2098. P, R; Genet-Varcin E. (1975), Etude de dents humaines isolées provenant des grottes de la Chaise de Vouthon (Charente) (suite). *Bulletins et Mémoires de la Société d'Anthropologie de Paris* Série 13, Tome 2 (2), 129-141. https://doi.org/10.3406/bmsap.1975.1808. P, R; Genet-Varcin E. (1975), Etudes de dents humaines isolées provenant des grottes de la Chaise Vouthon (Charente) (suite).*Bulletins et Mémoires de la Société d'Anthropologie de Paris*, Série 13 Tome 2 (3), 277-286. https://doi.org/10.3406/bmsap.1975.1818. P, R; Genet-Varcin E. (1976), Etude de dents humaines isolées provenant de La Chaise de Vouthon (Charente) (Fin). Bulletins *et Mémoires de la Société d'Anthropologie de Paris* Série 13, Tome 3 (3), 243-259. https://doi.org/10.3406/bmsap.1976.1853. P, R; Krukoff S. (1967), Reconstitution de la largeurbi-pariétale totale d'un crâne à partir d'un os isolé. *Comptes Rendus de l'Académie des Sciences de Paris, Série D- Sceinces Naturelles* 264, 1260-1262. P, R; Macchiarelli R. et al. (2006), How Neanderthal molar teeth grew. *Nature* 444 (7120), 748-751. https://doi-org.inee.bib.cnrs.fr/10.1038/nature05314. P, R; Piveteau J. et al. (1982), Les hominidés de la Chaise. *Prétirage du colloque international du C.N.R.S., Nice 16-21 Octobre 1982*, 901-9017. P, R; Puymérail L. et al. (2013), Analyse comparative structurale des diaphyses fémorales

néandertaliennes BD 5 (MIS 5e) et CDV-Tour 1 (MIS 3) de La Chaise-de-Vouthon, Charente, France. *Paléo* 24, 1-18. https://doi.org/10.4000/paleo.2676. P, R; Schwarcz H.P. Debénath A. (1979), Datation absolue des restes humains de la Chaise-de-Vouthon (Charente) au moyen du déséquilibre des séries d'uranium. *Comptes Rendus de l'Académie des Sciences de Paris, Série D – Sceinces Naturelles* 228, 1155-1157. D; Thoma A. (1975), L'occipital de la grotte Bourgeois-Delaunay (La Chaise, Charente). Etude biométrqiue. *Comptes Rendus de l'Académie des Sciences de Paris, Série D – Sciences Naturelles* 281 (22), 1821-1824. P, R

Code data collected by: Jean-Luc Voisin, Irka Hajdas, Pere Gelabert

1. **LA CHAPELLE-AUX-SAINTS**, Bouffia de la Chapelle-aux-Saint, Bouffia Bonneval (site located on Mr. Bonneval's property).
2. Rock shelter near the village of La Chapelle-aux-Saints, Corrèze, France, 40 km SE of Brive-la-Gaillarde; 44°59'N, 1°43' E.
3. A. & J. Bouyssonie and L. Bardon in 1908.
4. Cave deposits.
5. Yes (La Chapelle-aux-Saints 1, but see Rendu et al., 2014, 2016; Dibble et al., 2015).
6. Unit 1.
7.1 Mousterian (type Quina and MTA).
7.2 Levallois and Quina.
7.3 No
7.4 No
7.5 No
7.6 No
7.7 None
8.1 Large mammals and birds.
8.2 No
9.1 No
9.2 TL (unconvincing dates): 20000 and 35000 BP; ESR: 56000 +/- 4000 and 47000 +/- 3000 BP (see Beauval et al., 2004).
9.3 Stratigraphy based on rock structures and color.
10. La Chapelle-aux-Saints 1: nearly complete skeleton; LCAS 2012 R73 #221 (no number, discovered in 1920); LCAS 2011 R73 #26, LCAS 2011 S73 Rem 10-15 seau 1, LCAS 2012 T74 S3 Rem 15-20 seau 1 and T73 S2 Rem 10-15 seau 2, LCAS 2012 Q74 S1 Rem 50-55 seau 1.
10.1 La Chapelle-aux-Saint 1: male (greater sciatic notch morphology).
10.2 La Chapelle-aux-Saints 1: circa 60 years old (disappearance of the cranial sutures, the loss of many teeth well before death and the high level of osteoarthrosis); LCAS 2011 S73 Rem 10-15 seau 1: around 3 years old (worn stage of the occlusal surface); LCAS 2012 T74 S3 Rem 15-20 seau 1 and T73 S2 Rem 10-15 seau 2: 11-12 years old (high degree of wear and the absence of roots); LCAS 2012 Q74 S1 Rem 50-55 seau 1: around 10 years old (worn stage of the occlusal surface).
10.3 La Chapelle-aux-Saints 1: cranium with LP^4 (d), mandible with LP_4 and RM_3 (d); cervical vertebrae: C1 (f), C2 (ff), C5 (d), C6 (d), C7 (d), thoracic vertebrae: Th1 (d), Th2 (d), Th3 (d), Th4 (ff), Th5 (ff), Th6 (ff), Th8 (ff), Th10 (f), Th11 (ff), Th12 (ff), lumbar vertebrae: L1 (d), L2 (d), L4 (f), L5 (f), sacral vertebrae: S1 (ff), R ribs: 6 (f), 8 (f), 9 (f), L ribs: 8 (f), 9 (f), 10 (f); R scapula (ff) (see remarks), L clavicle (ff), R humerus (f), L humerus (f), R radius (f), L radius (f), R ulna (f), L ulna (f) (see remarks), L scaphoid (f), L capitate (d), L metacarpal 2 (f), L metacarpal 3 (d) (see remarks), R metacarpal 5 (d), R proximal phalanx 3 (d), L proximal phalanx 3 (d), R proximal phalanx 1 (i) (see remarks), R distal phalanx 1 (f) (see remarks); R Ilium with part of acetabulum (ff), iliac and ischial portions of acetabulum (ff), R femur (ff), L femur (ff), R patella R (i), L patella (i), R tibia R (ff) L tibia (f), R fibula (ff), L talus L (d), L calcaneus (d), R meta-

tarsal 1 (ff), R metatarsal 2 (ff), R and L metatarsal 3 (f) (see remarks), R metatarsal 5 (ff), R proximal phalanx 2 (d), R proximal phalanx 5 (f).

10.4 LCAS 2011 R73 #12 (belongs to La Chapelle-aux-Saints 1, discovered in 2011): root of LP^3; LCAS 2012 R73 #221: LP^4; R M^3 (discovered in 1920); LCAS 2011 R73 #26: Root of an inferior adult molar; LCAS 2011 S73 Rem 10-15 seau 1: RdI^1; LCAS 2012 T74 S3 Rem 15-20 seau 1 & T73 S2 Rem 10-15 seau 2: RdM^2; LCAS 2012 Q74 S1 Rem 50-55 seau 1: RdM_1.

10.5 La chapelle-aux-Saints 1: vertebral brucellosis (infectious disease); auditory exostoses and extensive alveolar inflammation including apical abscesses and antemortern tooth loss (inflammatory processes); distal healed fracture of a mid-thoracic rib (trauma); degenerative joint disease (osteoarthritis ?) at the right condyle of the mandible, pronounced osteoarthritis of the lower cervical and upper thoracic vertebrae. extensive osteoarthritis of the left hip, osteoarthritis of the right hip, degenerative joint disease (osteoarthritis ?) of the right fifth proximal interphalangeal articulation, bilateral humeral head eburnation, and minor exostosis formation on the right humerus, ulna, and radius, Baastrup disease; bipartite patella(non metric trait, potentially pathological) (Straus, Cave 1957; Trinkaus 1985; Haeusler et al. 2019; Rothschild et al. 2021).

11. La Chapelle-aux-Saints 1: Musée de l'Homme, 17 Place du Trocadéro, 75016, Paris, France. All other remains: Laboratory, UMR PACEA 5199 – Universite de Bordeaux, Bâtiment B2, Allée Geoffroy Saint-Hilaire CS 50023, 33615 Pessac Cedex.

12. Musée de l'Homme de Neandertal "Jean Bouyssonie", Sourdoire, 19120 La Chapelle-aux-Saints. Musée de l'Homme, Palais de Chaillot, 17, place du Trocadéro, 75116 Paris.

13. All la Chapelle-aux-Saints remains are available at the following web site https://3dtheque.mnhn.fr/. To use these data go to http://colhelper.mnhn.fr/.

14.1 Three bone samples.

14.2 La-Chapelle-aux-Saints (?).

14.3 –

14.4 –

14.5 PCR of the Hypervariable Region 1 of the mitochondria.

14.6 –

14.7 –

14.8 –

14.9 –

14.10 –

15. No

16. No

17. Beauval, C., et al. (2004), La Chapelle-aux-Saints. Un siècle de recherche. In: *XXVIe congrès Préhistorique de France, Vol. 2 Un siècle de construction du discours scientifique en préhistoire*, edited by Evin J., 197-214. A, D; Boule, M. (1908), L'Homme fossile de la Chapelle-aux-Saints. *L'Anthropologie (Paris)*, 19 (1-2), 519-525. P; Boule, M. (1911-13), L'Homme fossile de la Chapelle-aux-Saints. *Annales de Paléontologie*. 6, 7 & 8, 111-172, 21-192 & 1-70. P; Bouyssonie, A., et al. (1908), Découverte d'un squelette humain moustérien à la Bouffia de la Chapelle-aux-Saints (Corrèze). *L'Anthropologie (Paris)*, 19 (1-2), 513-518. A, P; Bouyssonie, A., et al. (1908), Découverte d'un squelette humain moustérien à la Bouffia de la Chapelle-aux-Saints (Corrèze). *Comptes Rendus Hebdomadaires des Séances de l'Académie des Sciences*, 147, 1414-1415. A, P; Dibble, H.L., et al. (2015), A critical look at evidence from La Chapelle-aux-Saints supporting an intentional Neandertal burial. *Journal of Archaeological Science*, 53, 649-657. https://doi.org/10.1016/j.jas.2014.04.019. A; Gómez-Olivencia, A. (2013), Back to the old man's back: Reassessment of the anatomical determination of the vertebrae of the Neandertal individual of La Chapelle-aux-Saints. *Annales de Paléontologie*, 99 (1), 43-65, https://doi.org/10.1016/j.annpal.2012.07.002. P, R; Goudot, P. (1999), The mandibular canal of a Neanderthal: the La Chapelle-aux-Saints man anatomical-radiological study. *Journal of Cranio-Maxillofacial Surgery*, 27 (2), 134-139. https://doi.org/10.1016/S1010-5182(99)80027-4. P; Haeusler, M., et al. (2019), Morphology, pathology, and the vertebral posture of the La Chapelle-aux-Saints Neandertal. *Proceedings of the National Academy of Sciences (USA)*, 116 (11), 4923-4927. https://doi.org/10.1073/pnas.1820745116. P; Piveteau, J., Dechaseaux, C. (1957), *Traité de paléontologie – Tome VII: primates, paléontologie humaine*. Masson, Paris, 675. P, R; Rendu, W., et al. (2014), Evidence supporting an intentional Neandertal burial at La Chapelle-aux-Saints. *Proceedings of the National Academy of Sciences (USA)*, 111 (1), 81-86. https://doi.org/10.1073/pnas.1316780110 A, P, R; Rendu, W., et al. (2016), Let the dead speak... comments on Dibble et al.'s reply to "Evidence supporting an intentional burial at La Chapelle-aux-Saints". *Journal of Archaeological Science*, 69, 12-20. https://doi.org/10.1016/j.jas.2016.02.006. A; ROCEEH database (ROAD) (2024) Locality La Chapelle-aux-Saints. https://www.roceeh.uni-tuebingen.de/roadweb seen June 13th 2024; Rothschild, B., Haeusler, M. (2021), Possible vertebral brucellosis infection in a Neanderthal. Scientific Reports 11, n°19846 (9 pages). https://doi.org/10.1038/s41598-021-99289-7. P; Serre, D, et al. (2004), No Evidence of Neandertal mtDNA Contribution to Early Modern Humans. *PLoS Biology* 2 (3), 0313-0317, e57. https://doi.org/10.1371/journal.pbio.0020057 G; Straus, W.L., Cave, A.J.E. (1957), Pathology and the posture of Neanderthal Man. *Quarterly Review of Biology*, 32 (4), 348-363. www.jstor.org/stable/2816957. P, R; Trinkaus, E. (1985), Pathology and the posture of the La Chapelle-aux-Saints Neandertal. *American Journal of Physical Anthropology*, 67 (1), 19-41. https://doi-org./10.1002/ajpa.1330670105. P, R; Trinkaus, E. (2011), The postcranial dimensions of the La Chapelle-aux-saints 1 Neandertal. *American Journal of Physical Anthropology*, 145 (3), 461-468. https://doi-org.inee.bib.cnrs.fr/10.1002/ajpa.21528. P

18. Bouffia is an old French word meaning "cave" in some part of France. Regarding thoracic vertebrae we follow Boule's determination but there are some discussion about the attribution for some of them, especially Th2 (see Gomez-Olivencia, 2013); R scapula was discovered in 2011 with the number LCAS 2011 S73 #322; The distal extremity of the left ulna has been found in 2011 with the number LCAS 2011 S73 #62); The distal extremity of the left metacarpal 3 has been found in 2011 with the number LCAS 2012 S73 #449; R proximal phalanx 1 has been found in 2011 with the number LCAS 2011 R74 #109; R distal phalanx 1 has been found in 2011 with the number LCAS 2012 S73 S2 Rem 25-30 seau 2; L metatarsal 3 has been found in 2011 with the number LCAS 2012 S73 #568.

Code data collected by: Jean-Luc Voisin

1. **LA CROUZADE**
2. Cave, near the village of Gruissan, Aude, France, 12 km South-East of Narbonne; 43°07’51” N, 3°05’26” E.
3. M. Pinchinat 1866 (discovery); Th. Rousseau 1874 (excavations); pat Héléna’s family from 1912 to 1946 (with interruptions, excavations).
4. Cave deposits.
5. No
6. Level 8: La Crouzade I and La Crouzade X, Level 7: La Crouzade II and La Crouzade IX ; Level 6: La Crouzade IV; Level 6, 7 or 8: La Crouzade III (de Lumley, 1971).

7.1 Mousterian.
7.2 Mousterian Paracharentian type.
7.3 Bones (some avian bones show cutmarks indicating the possible use of feathers by humans).
7.4 No
7.5 No
7.6 No
7.7 Fire places (layer 7).
8.1 Large mammals, birds.
8.2 No
9.1 No
9.2 AMS ^{14}C: dating on animal bones, charcoal and one human remain (La Crouzade VI-modern human, level C5): 31 200 ± 400 BP and 30 640 ± 640.
9.3 Biostratigraphy on large mammals (MIS 3).

10. La Crouzade I, La Crouzade II, La Crouzade III, La Crouzade IV, La Crouzade IX, La Crouzade X.

10.1 La Crouzade I: Could be female (low robustness of bone).
10.2 La Crouzade IX: 3 months old (length of the humerus and the absence of fused epiphyses); La Crouzade I: juvenile/subadult (humerus morphology).
10.3 La Crouzade X: L clavicle (ff); La Crouzade I: L humerus (f); La Crouzade IX: L humerus (f); La Crouzade II: first pollical phalanx (i); La Crouzade IV: hand phalanx (ff); La Crouzade III: distal hand phalanx (i).
10.4 –
10.5 –

11. Musée Archéologique de Narbonne, Palais des Archevêques, Place de l’Hôtel de Ville, 11100, Narbonne, France.
12. –
13. –

14.1 No
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –

14.8 –
14.9 –
14.10 –

15. No
16. No

17. Bachellerie M. (2016), *Les cervidés de la grotte de la Crouzade (Gruissan, Aude), caractérisation des populations, exploitation par les hommes du Pléistocène supérieur et modifications par les prédateurs*. Master Thesis. Université de Perpignan. Z; Bachellerie M. (2017), *Les artiodactyles de la grotte de la Crouzade (Gruissan, Aude) : taphonomie, caractérisation des populations et exploitation par les hommes du Pléistocène supérieur.* Master Thesis. Université de Perpignan. Z; Bertrand B. (1999), *Néandertaliens du Midi-Méditerranéen de la France, La Crouzade, Tournal, Le Portel, Pié-Lombard*. Master Thesis. Institut de Paléontologie Humaine. P, R; de Lumley-Woodyear H. (1971), Paléolithique inférieur et moyen du Midi méditerranéen dans son cadre géologique. Tome II. Bas-Languedoc – Roussillon – Catalogne. *Gallia préhistoire*, Suppléments 5-2, 443. https://www.persee.fr/doc/galip_0072-0100_1971_sup_5_2. A; de Lumley M.A. (1973), Anténéandertaliens et néandertaliens du bassin méditerranéen occidental européen. *Etude Quaternaire*, 2, 1-603. P, R; Garcia-Fermet T. (2023) The bird remains from La Crouzade Cave (Gruissan, Aude): The mixed origin of a Middle Palaeolithic bone accumulation. *Quaternary Environments and Humans*, 1, 100001 (15 p.). https://doi.org/10.1016/j.qeh.2023.100001. Z; Gerber J.P. (1973), *La faune de grands mammifères du Würm ancien dans le Sud-Est de la France*. Travaux du Laboratoire de Géologie historique et de Paléontologie de l’Université de Provence, Centre Saint-Charles, 310 pp, Z; Héléna P. (1928), La stratigraphie de la grotte de la Crouzade (Commune de Gruissan, Aude). *Bulletin de la Commission archéologique de Narbonne*, 17, 5-50 (1926 – 1927). A, Str; Héléna P., Héléna T. (1930), Rapport succinct des fouilles exécutées dans la grotte de La Crouzade (Aude) du 9 juillet au 6 août 1930. *Institut de Paléontologie Humaine de Paris*, 8. A, Str; Henry-Gambier D., Sacchi D. (2008), La Crouzade V-VI (Aude, France): un des plus anciens fossiles d’anatomie moderne en Europe occidentale. *Bulletins et Mémoires de la Société d’Anthropologie de Paris* 20 (1-2), 79-104. https://doi.org/10.4000/bmsap.6054. P, D; Lebègue F. (2012), *Le Paléolithique moyen récente entre Rhône et Pyrénées. Approche de l’organisation techno-économique des productions lithiques, schémas de mobilité et organisation du territoire*. PhD. Thesis. Université de Perpignan Via Domitia. A; Rousseau T. (1874), Habitation préhistorique de La Crouzade. *Bulletin de la Société d’Histoire Naturelle de Tooulouse* 8, 363-372. A; Saos T. et al. (2020), The Middle and Upper Palaeolithic at La Crouzade cave (Gruissan, Aude, France): New excavations and a chronostratigraphic framework. *Quaternary International* 551, 85-104. https://doi.org/10.1016/j.quaint.2019.11.040. A, Z, P, E

18. Saos et al (2020) define 3 levels C8, C7, C6 and C5. C8 to C6 corresponds more or less to levels 8, 7 and 6. Level C5 is the first upper paleolithic level. Saos and colleagues have not yet studied the upper paleolithic levels.

Code data collected by: Jean-Luc Voisin, Irka Hajdas, Pere Gelabert

1. **LA FERRASSIE** – Grand Abri
2. Rock-shelter, close to the village of Savignac du Bugue, 40 km South-East of Périgueux, France; 44°57'07" N, 0°56'17" E.
3. M. Tabanou 1896-1898 (first excavations); M. Tabanou and D. Peyrony 1899 – 1902; D. Peyrony and L. Capitan 1902 – 1922; H. Delporte 1968 – 1975; discovery of human remains: La Ferrassie 1: September, 1909, La Ferrassie 2 : September 1910, La Ferrassie 3, 4b: August 1912, La Ferrassie 5: April 1920, La Ferrassie 6: June, 1921, La Ferrassie 7: 1990, La Ferrassie 8: 1973, La Ferrassie 10 : 2013 – 2014, La Ferrassie 11: 2013 – 2014, La Ferrassie 12: 2013 – 2014.
4. Cave deposit.
5. Yes: La Ferrassie 1, La Ferrassie 2, La Ferrassie 3, La Ferrassie 4bis, La Ferrassie 5 and La Ferrassie 6. Possible burial: La Ferrassie 8.
6. La Ferrassie 1-6: layers 4, 5 (previously Bed C-D, Peyrony 1934), western part: La Ferrassie 7-8: layer 6 (previously Bed E).

7.1 Mousterian (layer 4 to 5), Chatelperronian (layer 6).

7.2 Levallois.

7.3 No

7.4 No

7.5 No

7.6 Yes

7.7 Fireplaces (layers 4 and 5).

8.1 Large mammals.

8.2 No

9.1 No

9.2 Sample LF-86, C14, layer AC: 36.2 ± 0.2 ka BP; Sample LF-88, C14, layer AC: 35.4 ± 0.2 ka BP; Sample LF-89, C14, layer AC: 37.8 ± 0.3 ka BP; Sample LF-92, C14, layer AC: 40.8 ± 0.4 ka BP; Sample LF-98, C14, layer AC: 34.0 ± 0.2 ka BP; Sample LF8-1, OSL, layer 1: 43.0 ± 6/54.0 ± 3 ka (OSL age); Sample LF8-2, OSL, layer 3: 55.0 ± 3/56.0 ± 3 ka (OSL age); Sample LF8-3, OSL, layer 4: 67.0 ± 4/71.0 ± 3 ka (OSL age); Sample LF8-4, OSL, layer 5: 60.0 ± 7/66.0 ± 3 ka (OSL age) (Balzeau et al. 2020 for all).

9.3 Biostratigraphy based on vertebrates and typological based on lithic industries.

10. La Ferrassie 1: LF1 or 23.645 ; La Ferrassie 2: LF2 or 23.646; La Ferrassie 3: LF3 or Bloc B, 23.647 B; La Ferrassie 4bis: LF4bis or Bloc A, 23.647 A2; La Ferrassie 5: LF5 or 23.647 C; La Ferrassie 6: LF6 or 23.648; La Ferrassie 7: LF7 (70.1.L2bJ.168); La Ferrassie 8: LF8 (no catalogue number, except for one tooth); La Ferrassie 10: LF10 (MNP 1934-4-1-3; La Ferrassie 11: LF11 (73.60.M2e 136); La Ferrassie 12: LF12 (tamisage L2 carré 13).

10.1 La Ferrassie 1: Male – based on the sciatic notch and long bones length; La Ferrassie 2: Female – based on the sciatic notch and long bones length; La Ferrassie 3, 4b, 5, 6, 7, 8, 11, 12: No sex determination.

10.2 La Ferrassie 1: adult (40 to 45 years old) (cranial sutures, dental abrasion, medullary index of long bones, pubic symphysis, costal morphology); La Ferrassie 2: adult (20 to 25 years old) (costal morphology, dental abrasion); La Ferrassie 3: circa 10 years old (overall size, skeletal maturation); La Ferrassie 4bis: infant (9 months old) (fusion of ossification centres); La Ferrassie 5: foetus (up to 7 months old) (fusion of ossification centres); La Ferrassie 6: circa 3 years old (fusion of ossification centres); La Ferrassie 8: 23 months old (teeth eruption).

10.3 La Ferrassie 1: LF1 (23.645): Cranium with 16 teeth (i- but heavily restored), mandible with 16 heavily worn teeth (f), endocranium cast (i), ear ossicles (R and L); cervical vertebrae C1 to C7 (C2 missing) (i to f), thoracic vertebrae (T1 to T11) (f), lumbar vertebrae (L1 to L5) (f), sacrum (ff), ribs 4, 10, 11 (d), ribs 2, 3, 5 to 9 (ff), 11 ribs fragments (ff); clavicles (R and L) (d), scapula (R and L) (ff), humerus (R and L) (d), radius (R and L) (d), ulna (R and L) (d), trapezium (R) (i), trapezium (L) (d), capitate (R) (i), hamate (R) (i), scaphoid (L) (f), trapezoid (L) (i), triquetrum (L) (f), metacarpal 1 (R and L) (i), metacarpal 2 (R) (i), metacarpal 2 (L) (ff), metacarpal 3 (R and L) (f), metacarpal 4 (R and L) (f), metacarpal 5 (R) (f), metacarpal 5 (L) (i), proximal phalanx 1 (R) (f), proximal phalanx 1 (i), proximal phalanx 2 (L) (i), proximal phalanx 3 (R and L) (i), proximal phalanx 4 (R and L) (i), proximal phalanx 5 (R and L) (i), middle phalanx 3 or 4 (R) (i), middle phalanx 3 (L) (i), middle phalanx 4 (L) (i), middle phalanx ? (L) (i), distal phalanx 1 (R and L) (i), distal phalanx 2 (L) (i), distal phalanx 3 (L) (i), distal phalanx 4 (L) (i), distal phalanx 5 (L) (i), thumb sesamoid bone (i); iliac bone (R) (d), iliac bone (L) (f), femur (R and L) (d), tibia (R and L) (f), fibula (R) (ff), fibula (L) (f), calcaneus (R) (ff), calcaneus (L) (f), talus (R and L) (i), medial cuneiform (R and L) (i), cuboid (L) (d), middle cuneiform (L) (i), lateral cuneiform (L) (i), navicular (L) (d), metatarsal 1 (R) (f), metatarsal 1 (L) (i), metatarsal 2 (R) (d), metatarsal 2 (L) (f), metatarsal 3 (R and L) (ff), metatarsal 4 (R) (ff), metatarsal 4 (L) (f), metatarsal 5 (R and L) (f), proximal phalanx 1 (R) (f), proximal phalanx 2 (R) (ff), proximal phalanx 4 (R) (i), intermediate phalanx 3 (?) (R) (i), intermediate phalanx 2 (L) (f), intermediate phalanx 4 (L) (i), distal phalanx 2 (?) (L) (i). La Ferrassie 2: LF2 (23.646): Cranial bones (ff), maxilla (R) with 6 teeth (I^1, I^2, C, P^3, P^4, M^1) (i), temporal bone (R) (d), thoracic vertebrae (T5 to T7) (f to ff), lumbar vertebrae (ff), sacrum (ff), remains belonging to unidentifiable vertebrae (ff), rib 3 to 12 (L) (ff), rib 3 to 11 (R) (ff), scapula (R and L) (ff), humerus (R and L) (d), radius (R) (d), ulna (R) (d), capitate (R) (i), scaphoid (R) (d), scaphoid (L) (i), hamate (R) (i), trapezium (R) (i), trapezoid (R and L) (i), pisiforme (L) (i), metacarpal 1 (L) (f), metacarpal 1 (R) (i), metacarpal 2 (R) (f), metacarpal 3 (R and L) (i), metacarpal 3 (R and L) (i), metacarpal (R and L) (i), metacarpal 5 (R and L) (i), proximal phalanx 1 (R) (i), proximal phalanx 2 (R and L) (d), proximal phalanx 3 (L) (i), proximal phalanx 4 (R) (i), proximal phalanx 4 (L) (d), proximal phalanx 5 (R) (d), proximal phalanx 5 (L) (i), middle phalanx 3 (L) (i), middle phalanx 4 (R) (i), distal phalanx 3 (L) (i); coxal bone (R and L) (ff), femur (R and L) (d), patella (R) (i), patella (L) (d), tibia (R and L) (d), fibula (R and L) (d), talus (R and L) (i), calcaneus (R and L) (d), navicular (d), cuboid (R and L) (f), medial cuneiform (R and L) (d), middle cuneiform (R and L) (d), lateral cuneiform (R and L) (d), metatarsal 1 (R and L) (i), metatarsal 2 (R) (d), metatarsal 2 (L) (f), metatarsal 3 (R) (i), metatarsal 3 (L) (d), metatarsal 4 (R and L) (i), metatarsal 5 (R and L) (i), proximal phalanx 1 (R and L) (d), proximal phalanx 2 (R) (d), proximal phalanx 3 (R) (d), proximal phalanx 4 (R) (d), proximal phalanx 5 (d), intermediate phalanx 2 (R and L) (d), proximal phalanx 3 (R and L) (d), proximal phalanx 4 (R and L) (d), distal phalanx 1 (R) (f). La Ferrassie 3: LF3 (Bloc B, 23.647 B): parietal bone (L) (f), occipital bone (ff), temporal bone (L) (f), temporal bone with malleus, incus, stapes (R) (ff), sphenoid bone (ff); ulna (R)(f) and (L) (ff), radius (R) (f) and (L) (ff), capitatum (L) (ff), hamatum (L) (i), metacarpal (R)

(ff), metacarpal I (L) (f), metacarpal II (L) (f), metacarpal III (L) (i), metacarpal IV (L) (f), metacarpal V (L) (ff), distal phalanx (R) (i), proximal phalanx I (L) (i), proximal phalanx II (L) (i), proximal phalanx III (L) (i), proximal phalanx IV (L) (i), proximal phalanx V (L) (i), middle phalanx II (L) (i), middle phalanx III (L) (i), middle phalanx IV (L) (i), middle phalanx V (L) (i), distal phalanx I (L) (i), distal phalanx II (L) (i), distal phalanx III (L) (i), distal phalanx V (L) (i), talus (R) (i). La Ferrassie 4bis: LF4bis (Bloc A, 23.647 A2): Cranial vault (ff) with a part of the frontal bone, petrous bone (L) (i), 7 vertebrae bodies (i and f), 14 neural arches (f and ff), 10 right ribs (f), 11 left ribs (f), 3 undeterminable bone remains; clavicle (L) (f), scapula (R) (f), humerus (R) (ff) and (L) (i), ulna (R) (i), radius (R) (i), ilium (R and L) (f) associated to 16 ilium fragments, femur (R) (ff) and (L) (f), tibia (R and L) (ff), fibula (R and L) (ff). La Ferrassie 5: LF5 (23.647 C): Cranial vault (ff), one neural arch (ff), humerus (L) (ff), ulna (L) (ff), femur (R) (ff) and (L) (i), 6 undeterminable bones. La Ferrassie 6: LF6 (23.648): axis (f), cervical vertebrae 5 (f), cervical vertebrae 6 (f), cervical vertebrae 7 (i), thoracic vertebrae 1(?) (ff), thoracic vertebrae 2 (?) (ff), thoracic vertebrae 11 (ff), thoracic vertebrae 12 (ff), 6 vertebrae undeterminable, lumbar vertebra 1 (f), lumbar vertebrae 4 (f), lumbar vertebrae 5 (f), lumbar vertebra undeterminable (ff), sacrum (ff), first rib (L) (i), second rib (L) (f), fourth rib (L) (f), fifth rib (L) (ff), sixth rib (L) (f), seventh rib (L) (i), eighth rib (L) (f), ninth rib (L) (f) and 3 undeterminable ribs (L), tenth rib (R) (f), eleventh rib (R) (f), twelfth rib (R) (i), and 4 undeterminable ribs (R), six undeterminable ribs; humerus (R)(ff) and (L) (f), left (ff), radius (R) (ff), ulna (R) (f) and (L) (i), metacarpal I (ff), 2 metacarpals (II-V) (i); ilium (R) (f), ischium (R) (i), pubis (R) (i), ilium (L) (f), ischium (L) (f), pubis (L) (i), femur (R and L) (i), tibia (R) (i) and (L) (ff), fibula (R) (i), calcaneus (R) (i) and (L) (ff), talus (R). La Ferrassie 8: LF8 (some bones have their own label): Cranial vault (ff), two occipital bones (F73.1.M2.313 and the other without label) (ff), zygomatic bone (f), mandible (R and L) (ff); 25 vertebrae (ff), 25 rib fragments, proximal hand phalanx (ray 2?) (L?); proximal hand phalanx (rays 2 to 4) (f), proximal hand phalanx (ray 5) (ff); ischium (R and L) (i), ilium (L) (i), pubis (L) (f), one foot phalanx.

10.4 La Ferrassie 4bis: LF4bis (Bloc A, 23.647 A2) : LdM_2; La Ferrassie 7: LF7 (70.1.L2bJ. 168) : RP^4; La Ferrassie 8: LF8 (no catalogue number) : RdI^1, RdC', RdM^2, LdM^1, LdM^2, RdI_1, RdI_2, LdC_1, RdC_1, LdM_1, RdM_1, LdM_2; La Ferrassie 10: LF10 (MNP 1934-4-1-3): RM_3; La Ferrassie 11: LF11 (73.60.M2e 136): LC'; La Ferrassie 12: (tamisage L2 carré 13): RM_3 (Neandertal?). La Ferrassie 8bis and La Ferrassie 7bis: I1.

10.5 La Ferrassie 1: alveolar mandibular abscesses; sixth or seventh rib fragment (L): two bulges which could be related to a traumatic event or related to an hypertrophic pulmonary osteoarthropathy; vertebrae: osteoarthritis; Left clavicle: a possible well healed fracture without bone displacement; femur (R): a possible avulsion fracture of the greater trochanter with a medial displacement of the trochanter; periostitis (both femora, both tibiae, fibula, radius and the first metatarsal (R)).

11. LF1 to LF8 stored at the Musée de l'Homme, 17 Place du Trocadéro, 75016, Paris, France. LF8 (some cranial and vertebrae fragments, mandibles and teeth) and LF9 to LF12 stored at the Musée d'Archéologie Nationale, Place Charles de Gaulle, 78100 Saint-Germain-en-Laye, France.

12. –

13. All la Ferrassie remains are available at the following web site https://3dtheque.mnhn.fr/. To use these data go to http://colhelper.mnhn.fr/

14.1 –

14.2 –

14.3 –

14.4 –

14.5 –

14.6 –

14.7 –

14.8 –

14.9 –

14.10 –

15. –

16. –

17. Balzeau A., et al. (2020), Pluridisciplinary evidence for burial for the La Ferrassie 8 Neandertal child. Scientific Reports 10, 21230. https://doi-org.inee.bib.cnrs.fr/10.1038/s41598-020-77611-z. A, D, S; Becam G., et al. (2019), Isolated teeth from La Ferrassie: Reassessment of the old collections, new remains, and their implications. *American Journal of Physical Anthropology*, 169(1), 132-142. https://doi.org/10.1002/ajpa.23798 P, R; Bourgon M. (1957), Les industries moustériennes et prémoustériennes du Périgord. *Archives de l'Institut de Paléontologie Humaine,* 27, 1-141 A ; Capitan L., Peyrony D. (1909), Deux squelettes humains au milieu de foyers de l'époque moustérienne. *Comptes rendus des séances de l'Académie des Inscriptions et Belles-Lettres*, 53 (11), 797-806. doi: https://doi.org/10.3406/crai.1909.72388 A; Gambier D. (1992), Vestiges humains du Paléolithique supérieur. Inventaire et description préliminaire de spécimens inédits des collections du Musée national de Préhistoire (Les Eyzies-de-Tayac). *Paléo* 4, 91-100. https://doi.org/10.3406/pal.1992.1196 P, R ; Gambier D., et al. (1990), Dents de Font-de-Gaume (Chatelperronien et Aurignacien) et de La Ferrassie (Aurignacien ancien) en Dordogne. *Paléo* 2,. 143-152. https://doi.org/10.3406/pal.1990.994 P, R; Gómez-Olivencia A. (2013), The presacral spine of the La Ferrassie 1 Neandertal: a revised inventory. *Bulletins et Mémoires de la Société d'Anthropologie de Paris* 25 (1-2), 19-38. P, R https://doi.org/10.1007/s13219-012-0064-4. Gómez-Olivencia A., et al. (2015), La Ferrassie 8 Neandertal child reloaded: New remains and re-assessment of the original collection. Journal of Human Evolution, 82, 107-126. https://doi.org/10.1016/j.jhevol.2015.02.008. P, R; Gómez-Olivencia A., et al. (2018), La Ferrassie 1: new perspectives on a "classic" Neandertal. *Journal of Human Evolution*, 117, 13-32. https://doi.org/https://doi.org/10.1016/j.jhevol.2017.12.004 P, R; Guérin G., et al. (2015), A multi-method luminescence dating of the Palaeolithic sequence of La Ferrassie based on new excavations adjacent to the La Ferrassie 1 and 2 skeletons. *Journal of Archaeological Science*, 58, 147-166. https://doi.org/10.1016/j.jas.2015.01.019 .D, S; Heim J.-L. (1976), Les hommes fossiles de La Ferrassie – Tome I. *Archives de l'Institut de Paléontologie Humaine,* 35, 1-331. P, R, A, S ; Heim J.-L. (1982), Les hommes fossiles de La Ferrassie – Tome II. *Archives de l'Institut de Paléontologie Humaine,* 38, 1-272. P, R ; Heim J.-L. (1982), *Les enfants néandertaliens de la Ferrassie. Etude anthropologique et analyse ontogénique des hommes de néandertal*. Masson, 169. P, R; Maureille B. (2002), A lost Neanderthal neonate found. *Nature*, 419 (6902), 33-34. https://doi.org/doi:10.1038/419033a P, R; Peyrony D. (1934), La Ferrassie: Moustérien, Périgordien,

Aurignacien. Préhistoire III, 1-92. S; Talamo S., et al. (2020), The new 14C chronology for the Palaeolithic site of La Ferrassie, France: the disappearance of Neanderthals and the arrival of Homo sapiens in France. *Journal of Quaternary Science*, 35, 961-973. https://doi-org.inee.bib.cnrs.fr/10.1002/jqs.3236 D, S

18. The site is made up of 3 sites: a cave (formerly known as the Couyol cave), a small shelter (Petit Abri) and a large shelter (Grand Abri). All neandertal remains come from the large shelter. Specimen La Ferrassie 4: fœtus (2 bones) is now attributed to Le Moustier 2. Specimen La Ferrassie 7 (LF7) has a complex history. First, a right talus was discovered in 1924 in the faunal remains and considered as belonging to a new individual, thus named LF7. It was then reattributed to La Ferrassie 3. In 2013, a teeth was found in a small tube stored in the box associated with the elements of LF8 and attributed to a new individual, named La Ferrassie 7 (LF7). In 1992, a tooth (M3) was found by Gambier in the perigordian fauna of the large shelter and named LF8. This tooth was succinctly described but not attributed to any human group (Neanderthal or modern). It is not cited here. Similarly, this author also found an incisor in the Aurignacian fauna of the large shelter and named it La Ferrassie 7. These two teeth are in the Musée des Eyzies. Specimen La Ferrassie 9 is a modern human tooth coming from La Ferrassie cave. One presacral vertebrae should be attributed to LF2 instead of LF1. Ossseous and other “offerings” are younger than previously though and thus are not associated to Neandertal remains.

Code data collected by: Jean-Luc Voisin

1. **LA MASQUE**
2. Cave close to the Village of Entrechaux, Vaucluse, France, 22 km North East from Capentras.
3. H. Nicolas 1886.
4. Cave deposits.
5. No
6. One Middle Palaeolithic assemblage, no more detail known.
7.1 Mousterian.
7.2 Levallois.
7.3 No
7.4 No
7.5 No
7.6 No
7.7 None
8.1 Large mammals.
8.2 No
9.1 No
9.2 No
9.3 No
10. La Masque 1: La Masque 2, La Masque (no number).
10.1 –
10.2 La Masque 1: juvenile (based on humeral morphology); La Masque 2: adult (based on tooth morphology).
10.3 La Masque 1: Cranial bones (ff); vertebrae (?), humerus (?), patella (?), ulna (?), radius (?), hand bones, foot bones.
10.4 La Masque 2: LP^4 (d); La Masque no number: many isolated molars and incisor (Nicolas 1888).
10.5 –
11. La Masque 1 and the other remains discovered by Nicolas (1888) may have been lost. La Masque 2: unknown.
12. –
13. –
14.1 No
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No

17. Crégut-Bonnoure, E., et al. (2011), Nouvelles données sur les sites pléistocènes et holocènes à *Ursus arctos* du Vaucluse (sud-est de la France). *Quaternaire*, Hors-série 4, 147-183. A Z; de Lumley, H. (1962), Paléolithique ancien et moyen en Vaucluse. *Société d'Etude des Sciences naturelles de Vaucluse*, 29-47. A; de Lumley, M.A. (1973), Anténéandertaliens et néandertaliens du bassin méditerranéen occidental européen. *Etude Quaternaire*, 2, 1-603. P; de Lumley, H. (1959), La grotte de la Masque (Vaucluse); station paléolithique avec rhinocéros de Merck. *Bulletin de la Société Géologique de France*, Série 7, tome I (9), 903-915. https://doi.org/10.2113/gssgfbull.S7-I.9.903, Z; Nicolas, H. (1888), Recherches préhistoriques faites aux environs d'Avignon, année 1887. *Association française pour l'avancement des Sciences,* Compte Rendu de la 16e session, Toulouse, 749-755. P, A

18. La Masque 1 remains discovered by Nicolas (1888) were grouped together and described as a single individual by Oakley et al (1971), but actually belong to several individuals. In addition, the Mousterian provenience for all these is uncertain.

Code data collected by: Jean-Luc Voisin, Silvana Condemi

1. **LA QUINA**, La Quina-Amont
2. Rock shelter, near the village of Gardes-le-Pontraroux, Charente, France, 25 km South of Angoulême; 45°30'26" N, 0°17'34" E.
3. G. Chauvet 1872 (discovery), Dr. L. Henri-Martin 1906 to 1936 (first excavations), G. Henri-Martin 1953 to 1965 (excavations), A. Jelinek and A. Debénath 1985 to 1995 (excavations).
4. Rock shelter and open air deposits.
5. Yes – LQ5.
6. LQ29 : layer 6a; LQ36: layer 9c; LQ30, LQ35 : layer 6d; LQ33 : layer 8; LQ17 layer 2 or D (?); LQ3, LQ4a, LQ4b, LQ7, LQ9, LQ20abcd, LQ2, LQ38: layers D to K; LQ18: layer G; LQ31, LQ32, LQ36, LQ38: layer G1; LQ1ab, LQ5, LQ10, LQ27: layers L to Q; LQ28: layer L; LQ34: layer N; LQ5: Lower unit (layer 3 (couche 3), as defined by Henri-Martin, 1911).

7.1 Mousterian for the entire sequence of the Amont section of the site.

7.2 Upper unit: Denticulated Mousterian: layers 2, 4, 5, 6a, 6c and 8; Mousterian of Acheulean tradition, type B. *Middle and lower unites:* Mousterian Quina type (layers G2 to N).

7.3 Bones (including 3 human bones LQ23a, LQ23b, LQ23c), used as hammer and anvil.

7.4 No

7.5 No

7.6 No

7.7 Burned bones: upper unit; fireplace: middle unit.

8.1 Large mammals.

8.2 No

9.1 No

9.2 Bones (burned), ^{14}C, middle unit, 35 500 ± 530 years BP (Vogel & Waterbolk, 1963). Luminescence dating (Frouin et al., 2017, 1δ) : IR_{50}: Level 6, 51,4 ± 2,4 ka; Level 7: 52,7 ± 4,5 ka; Level 8: 55,5 ± 2,2ka; Level C: 54,7 ± 2,6ka; Level D: 51,6 ± 5,3ka; Level G1: 62,8 ± 5,3ka; Level G2: 46,7 ± 3,0ka; Level K: 59,3 ± 5,2 ka; Level L: 58,2 ± 2,8 ka; Level M: 55,3 ± 3,8 ka; Level N: 57,8 ± 2,8 ka; Level O-R: 55,5 ± 3,1ka. $pIR\text{-}IR_{225}$: Level 6: 51,6 ± $3,9_{fc}$ ka; Level 7: 51,5 ± $2,8_{fc}$ ka; Level C: 56,3 ± 3,7 ka; Level D: 59,7 ± 4,0 ka; Level G1: 73,6 ± 4,6 ka; Level G2: 53,2 ± 3,8 ka; Level K: 64,8 ± 4,3 ka; Level L: 66,2 ± 4,7 ka; Level M: 65,6 ± $3,7_{fc}$ ka; Level N: 60,5 ± $4,0_{fc}$ ka. OSL : Level 6: 44,9 ± 2,5 ka; Level 7: 50,2 ± 2,8 ka; Level 8: 51,0 ± 3,8 ka; Level C: 59,9 ± 4,4 ka; Level D: 56,5 ± 2,4 ka; Level G1: 61,0 ± 3,6 ka; Level G2: 43,1 ± 2,6 ka; Level L: 55,2 ± 2,2 ka; Level M: 39,1 ± 2,8 ka.

9.3 Relative dating depend on lithostratigraphy.

10. LQ1a, LQ1b, LQ2, LQ3, LQ4a, LQ4b, LQ5, LQ7, LQ8, LQ9, LQ10, LQ11, LQ13a, LQ13b, LQ17, LQ18, LQ20a, LQ20b, LQ20c, LQ20d, LQ21, LQ22, LQ23a, LQ23b, LQ23c, LQ23d, LQ24, LQ25, LQ26, LQ27, LQ28, LQ29, LQ30, LQ31, LQ32, LQ33, LQ34, LQ35, LQ36, LQ37, LQ38. MNI: 5 adults, 3 child (more according to Poplin, 1976: 26 adult, 6 child).

10.1 LQ5: could be female (see Verna, 2006) based on low bone robustness.

10.2 LQ5 (H5): adult (bone size and morphology); LQ18: Between 5 to 8 years old (teeth eruption and roots closure); LQ29: around 5 years old (root resorption); LQ30: around

5 years old (root resorption); LQ32: less than 12 years old (teeth wear); LQ33: less than 12 years old (teeth wear); LQ36: between 9 and 13,5 years old.

10.3 First number: new numeration (Verna, 2006), in brackets, old numerations. LQ2 (H2): occipital bone (f); LQ11 (H11): L occipital bone (f); LQ23d (H23'"): occipital bone (ff);; LQ34 – F 1005-1600: occipital and parietal bones (ff); LQ13a (H13): L parietal bone (f) (in two parts: H13 itself and the larger parietal fragment of the Ha2 bone set); LQ13b (from Ha2 bone set): L parietal bone (f); LQ23b (H23'): L front-parietal bones (ff); LQ23c (H23"): L parietal bone (ff); LQ25 (H25): L parietal bone (ff); LQ23a (H23): L parietal bone (ff); LQ7 (H7): R frontal bone (f); LQ8 (H8): L frontal bone (f); LQ28 – F 1006-515: frontal bone; LQ10 (H10): L temporal bone (d); LQ24 (H24): temporal bone (ff) (human?); LQ27 (H27): R temporal bone; LQ26 (H26): 3 skull fragments (ff) (human?); LQ9 (H9): L mandible (f) with P_3, P_4, M_1, M_2 and M_3; LQ3 (H3): thoracic vertebra (d); LQ1a (H1): R talus; LQ1b (H1'): L talus; LQ37: parietal bone (ff): the smallest parietal bone in the Ha2 bone set; LQ38 (LaQB2): femur (ff). LQ5 (H5): adult skeleton (remains still preserved): *Skull and mandible*- frontal bone (f), L and R parietal bones (ff), occipital bone (f), L and R temporal bones (f), R sphenoide bone (ff), L zygomatic (f) and R zygomatic bone (ff), L maxillary bone (f) with I^2, C', P^3, P^4, M^1, M^2 and M^3, R maxillary bone (ff) with I^1, C', P^3, P^4, M^1, M^2 and M^3, mandible (f) with LC_1, L and RP_3, L and RP_4, L and RM_1, L and RM_2, L and RM_3. *Upper limbs*- L and R humerus (f), L radius (f), L ulna (d). Recently found remains - Ha1: frontal bone fragments. Lost remains: *Axial skeleton* – cervical vertebra I (ff), cervical vertebra II (ff), cervical vertebra III, cervical vertebra IV, cervical vertebra V, cervical vertebra VI. *Pectoral girdle* – L and R scapula (ff), L and R clavicle (ff), L and R femur (ff). LQ18 (H18): frontal bone (d), L (f) and R (ff) parietal bones L (f), L and R temporal bones (f), occipital bone (ff), sphenoid bone (ff), L (f) and R (ff)zygomatic bones, maxillary bone (ff) with L and RI^1, L and RI^2, L and RdM^1, L and RdM^2 (M^1 and M^2 not fully functional).

10.4 LQ4a (H4): RM_2 R; LQ4b (H4'): LM_3; LQ17 (H17): RC'; LQ20a (H20): RM^2; LQ20b (H20'): RM^3; LQ20c (H20"): RP^3; LQ20d (H20'"): LC' (root); LQ21 (H21): LC'; LQ 22 (H22): RM^2; LQ29 – N 1004-272: RdI^1 (fully resorbed root); LQ30 – K 1006-1684: RdM^1 (fully resorbed root); LQ31 – H; 1006-38: L/RI_1; LQ32 – H 1006-287: LdC_1 (broken root); LQ33 – K 1006-2981: RdC' (broken root); LQ35 – N 1006-1310: RP_3; LQ36 – L 1006-1946: LdM^2 (fully resorbed root).

10.5 LQ5: periodontitis on the mandible, root hypercementosis, toothpick wear between M_1 and M_2 (L and R); LQ9: periodontitis.

11. Musée d'Archéologie nationale et domaine national de Saint-Germain-en-Laye, Place Charles de Gaulle, 78100 Saint-Germain-en-Laye, France: LQ1a, LQ1b, LQ2, LQ3, LQ6, LQ7, LQ8, LQ10, LQ11, LQ12, LQ13, LQ14, LQ15, LQ16, LQ17, LQ18, LQ19, LQ25 and LQ5 (Ha1 only), Ha2, LAQB2, LQ28, LQ29, LQ30 LQ31, LQ32, LQ33, LQ34, LQ35, LQ36.; Musée des Confluences, 86 Quai Perrache, 69 000 Lyon, France : LQ9, LQ21, LQ22, LQ23a, LQ23b, LQ23c, LQ23d.; Musée de l'Homme, 17, place du Trocadéro 75116 Paris, France: LQ4a and LQ5 (skull, mandible, L and R humerus, L radius, L ulna).; Institut de Paléontologie Humaine, 1 rue René Panhard, 75013, Paris, France : LQ27.; Field Museum of Natural History, 1400 S. Dusable Lake Shore Drive, Chicago, IL 60605 USA: LQ4b.

12. Musée de l'Homme, 17, place du Trocadéro 75116 Paris, France; Institut de Paléontologie Humaine, 1 rue René Panhard, 75013, Paris, France.

13. –

14.1 No

14.2 –

14.3 –

14.4 –

14.5 –

14.6 –

14.7 –

14.8 –

14.9 –

14.10 –

15. No

16. No

17. Debénath A. (1998), Stratigraphie – Nouvelles fouilles à La Quina (Charente): résultats préliminiares. *Gallia préhistoire* 40, 33-37. https://doi.org/10.3406/galip.1998.2401. Str; Frouin M. (2017), Dating the Middle Paleolithic deposits of La Quina Amont (Charente, France) using luminescence methods. *Journal of Human Evolution* 109, 30-45. https://doi.org/10.1016/j.jhevol.2017.05.002. D; Henri-Martin G. (1965), V. La Quina. *Bulletin de l'Association Française pour l'Etude du Quaternaire* 2 (3-4), 198-204. https://doi.org/10.3406/quate.1965.1007. A; Henri-Martin L. (1911), Sur un squelette de l'époque moustérienne trouvé en Charente. *Comptes Rendus Hebdomadaires de l'Académie des Sciences de Paris* 153, 728-730. P; Henri-Martin L. (1911), Présentation d'un crâne humain trouvé avec le squelette à la base du moustérien de La Quina (Charente): 1re note. *Bulletin de la Société Préhistorique Française* 8 (10), 615-627. P; Henri-Martin L. (1923), *L'homme fossile de La Quina*. Librairie Octave Doin, Paris. P, R; Jelinek A.J. (2013), *Neandertal lithic industries at La Quina*. The University of Arizona Press, Tucson, 419. A; L'Engle Williams F. et al. (2002), The Ice Age diet of the La Quina 5 Neandertal of southwest France. *L'Anthropologie (Paris)* 126 (4), 103056 (16 p.) https://doi.org/10.1016/j.anthro.2022.103056. E, A, Z; Piveteau J., Dechaseaux C. (1957), *Traité de paléontologie – Tome VII: primates, paléontologie humaine*. Masson, Paris, 675. P, R; Poplin F. (1976), Remarques théoriques sur les unités utilisées dans les études d'ostéologie quantitative, particulièrement en archéologie préhistorique. In: *IXe Congrès de l'Union Internationale des Sciences Préhistoriques et Protohistoriques, Thèmes spécialisés, B, Problèmes ethnographiques des vestiges osseux (prétirage)*. Nice, 124-141. Z; Stefan V.H., Trinkaus E. (1998), La Quina 9 and Neandertal mandibular variability. *Bulletins et Mémoires de la Société d'Anthropologie de Paris* 10 (3-4), 293-324. https://doi.org/10.3406/bmsap.1998.2519. P, R; Trinkaus E. (1976), The evolution of the hominid femoral diaphysis during the Upper Pleistocene in Europe and in the Near East. *Zeitschrift für Morphologie und Anthropologie* 67 (3), 291-319. P, R; Trinkaus E. (2016), The sexual attribution of the La Quina 5 Neandertal. *Bulletins et Mémoires de la Société d'Anthropologie de Paris* 28 (3-4), 111-117 (2016). https://doi.org/10.1007/s13219-016-0159-4. P, R; Turq A. (2000), Le Moustérien de type Quina. *Paléo* 2, 310-343. https://doi.org/10.3406/pal.2000.1275. A; Vallois H.-V. (1969), Le temporal néandertalien H27 de La Quina : étude anthropologique. *L'Anthropologie (Paris)* 73, 365-400, 525-544. P, R; Verna C. (2006), *Les restes humains de la station Amont de La*

Quina (Charente, France). PhD. Université Bordeaux 1, 629. P; Verna C. Poplin F. (2005), Nouvelle détermination de la patella néandertalienne H19 de La Quina (Charente): une patella de poulain. *Bulletin de la Société Préhistorique Française* 102 (3), 501-508. https://doi.org/10.3406/bspf.2005.13138. P, Z; Verna C. et al. (2010), Two new hominin cranial fragments from the Mousterian levels at La Quina (Charente, France). *Journal of Human Evolution* 58 (3), 273-278. https://doi.org/10.1016/j.jhevol.2009.11.003. P, R; Vogel J.C., Waterbolk H.T. (1963), Gröningen Radiocarbon Dates IV. *Radiocarbon*, 5, 163-202. D

18. The name La Quina-Amont is less used, but is more precise. La Quina is made up of three distinct sites stretching for over 300 m at the foot of a limestone cliff flanking the Voultron river: La Quina-Amont (or La Quina-Locus 1), La Quina-Aval (or La Quina-Locus 2) and La Quina-Locus 3. The latter was the first excavated and nearly nothing is known about it. La Quina Amont is the eponym site for the Mousterian Quina type and yielded Mousterian levels and Neanderthal remains. La Quina-Aval has yielded only upper Paleolithic remains and artifacts. Remains which were once considered human but are now defined as fauna: H6 (parietal bone); H12 (frontal bone); H14 (Parietal bone); H15 (parietal bone); H16 (parietal bone); H19 (patella).

Code data collected by: Katerina Harvati, Carolin Röding, Paraskevi Elefanti

1. **LAKONIS I**; Lakonis I Cave
2. Laconia, Mani Peninsula, Peloponnese, Greece; coordinates: 36°47’2” N, 22°34’40” E.
3. E. Panagopoulou 2002; Harvati et al. 2003.
4. Cave and occupational deposits (lithified).
5. No
6. Unit 1a layer 3.
7.1 Unit Ia: Transitional (initial Upper Paleolithic, IUP); Units IV-1b: Middle Paleolithic (Levallois-Mousterian).
7.2 Levallois, bladelets, blades, bifacial, flake.
7.3 No
7.4 No
7.5 Yes (no modification).
7.6 No
7.7 Hearths (Unit I); palimpsest (Unit I).
8.1 Large mammals (Unit IV-I); bird (Unit IV); reptile (Unit III-I); small mammals (Unit IV); fish (Unit III?).
8.2 Tree (*Prunus* charcoal).
9.1 No
9.2 Charcoal, C-14 AMS, Unit 1a (sample RTT3846), 44.5 +/- 2.33 (ka BP), Harvati et al., 2003; Charcoal, C-14 AMS, Unit 1a (sample RTT3847), 38.42 +/- 1.16 (ka BP), Harvati et al., 2003; Charcoal, C-14 AMS, Unit 1b (sample RTT3845), 43.15 +/- 1.79 (ka BP), Panagopoulou et al., 2004; Charcoal, C-14 AMS, Unit 1b (sample RTT3844), 43.335 +/- 1.8 (ka BP), Panagopoulou et al., 2004; Charcoal, C-14 AMS, Unit 1b (sample RTT3525), 39.64 +/- 1 (ka BP), Panagopoulou et al., 2004; Stalactite resting, U-Th, Unit 5 (sample LU-1 49D), 85.6 +/- 13.7, Panagopoulou et al., 2004; Stalactite resting, U-Th, Unit 5 (sample LU-1 80A), 174 +146/-56, Panagopoulou et al., 2004; Marine shell, C-14 AMS, Unit 1c (sample OxA19843), 38.38 +/- 0.26, Higham et al., 2014; Marine shell, C-14 AMS Unit 1b (sample OxA198761), 43.01 +/- 0.35, Higham et al., 2014.
9.3 No
10. LKH 1 (LKH-1) (tooth).
10.1 –
10.2 Adult (M3, wear).
10.3 –
10.4 LKH 1: LM_3.
10.5 No
11. Ephorate of Palaeoanthropology and Speleology (Hellenic Ministry of Culture), Ardittou 34b, 11636 Athens, Greece.
12. No
13. No
14.1 No
14.2 –
14.3 –
14.4 –

14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. Yes, Strontium, Richards et al., 2008.
16. No
17. Harvati, K., et al. (2003), First Neanderthal remains from Greece: the evidence from Lakonis. *Journal of Human Evolution* 45, 465-473. P, A, D; Panagopoulou, E., et al. (2004), Late Pleistocene archaeological and fossil human evidence from Lakonis cave, southern Greece. *Journal of Field Archaeology* 29, 323-349. A, R, E, D; Elefanti, P., et al. (2008), The transition from the middle to the upper Palaeolithic in the southern Balkans: the evidence from Lakonis I cave, Greece. *Eurasian Prehistory* 5, 85-96. A; Elefanti, P., Panagopoulou, E. (2016), Lithics and Identity at the Middle Palaeolithic site of Lakonis Cave I, Southern Peloponnese, Greece. In: Mina, M., Triantaphyllou, S., Papadatos, Y. (Eds.). *An Archaeology of prehistoric bodies and embodied identities in the eastern Mediterranean*, Oxbow Books, Oxford, 113-119. A; Starkovich, B.M., et al. (2020), Site Use and Maintenance in the Middle Palaeolithic at Lakonis I (Peloponnese, Greece). *Journal of Paleolithic Archaeology* 3, 157-186. Z, A, R; Roditi, E., Starkovich, B.M. (2022), Investigating Middle Palaeolithic subsistence: zooarchaeological perspectives on the potential character of hominin climate refugia in Greece. *Journal of Quaternary Science* 37, 181-193. Z; Higham, T., et al. (2014), The timing and spatiotemporal patterning of Neanderthal disappearance. *Nature* 512, 306-309. D; Richards, M., et al. (2008). Strontium isotope evidence of Neanderthal mobility at the site of Lakonis, Greece using laser-ablation PIMMS. *Journal of Archaeological Science* 35(5), 1251-1256. S; Smith, T. M., et al. (2009). Brief communication: dental development and enamel thickness in the Lakonis Neanderthal molar. *American Journal of Physical Anthropology* 138(1), 112-118. P; Ελεφάντη, Π., Παναγοπούλου, Ε. (2016). Λακωνίς Ι. Ένα τοπόσημο της Μέσης Παλαιολιθικής Μάνης'. Το αρχαιολογικό έργο στην Πελοπόννησο (ΑΕΠΕΛ1), 21-33. P, A, Z

Code data collected by: Jean-Luc Voisin

1. **LE LAZARET**
2. In Nice, near the shores of the Mediterranean, 33 bis Boulevard Franck Pilatte, 06300, Nice (Alpes maritimes), France; 40°43' N, 7°14› E.
3. This cave is known from a long time, but Dr. A. Naudot did the first excavations in 1842. Until 1950 there were a lot of little excavations and drillings. Between 1950 and 1966 Mr Octobon did the first "modern" excavations, following by Pr. H. De Lumley between 1961 to 2014.
4. Cave deposits and occupation deposits.
5. No
6. Laz 5 and 7: at the base of the Unit C-III, within archeostratigraphic unit 9; Laz 10: unit C-III, archeostratigraphic unit 10; Laz 1, Laz 4, Laz 8, Laz 9, Laz 10, Laz 11, Laz 12, Laz 13 and Laz 14: unit C-II upper, unit 16; Laz 15, Laz 16, Laz 17, Laz 18, Laz 19, Laz 20, Laz 21, Laz 22, Laz 23, Laz 24, Laz 25, Laz 26 and Laz 27: C-II lower, unit 26; Laz 28: C-II lower, unit 29; Laz 2 ans 3: C-II lower.
7.1 Unit C-III contains a proto mousterian lithic assemblage; Unit C-II to the base of Unit C-III contains an Acheulean lithic assemblage.
7.2 Acheulean.
7.3 No
7.4 No
7.5 Yes (not modified)
7.6 No
7.7 Fires places in nearly all archeostratigraphic units; alignment of stones and blocks in nearly all archeostratigraphic units, with a possible housing structure (archeostratigraphic unit 2); Laz 14 is a burnt bone.
8.1 Large mammals, small mammals, birds, reptiles, amphibians, molluscs.
8.2 No
9.1 No
9.2 U-Th and ESR on faunal teeth and stalagmitic floor (de Lumley 2018). The main prehistoric settlements have been dated to between 130 000 and 170 000 years BCE.
9.3 Biostratigraphy, MIS 5-6.
10. No reference number: human femur (discovered circa 1842) – lost. Lazaret 1 (Laz 1); Lazaret 2 (Laz 2); Lazaret 3 (Laz 3); Lazaret 4 (Laz 4); Lazaret 5 (Laz 5); Lazaret 6 (Laz 6); Lazaret 7 (Laz 7); Lazaret 8 (Laz 8); Lazaret 9 (Laz 9); Lazaret 10 (Laz 10); Lazaret 11 (Laz 11); Lazaret 12 (Laz 12); Lazaret 13 (Laz 13); Lazaret 14 (Laz 14); Lazaret 15 (Laz 15); Lazaret 16 (Laz 16); Lazaret 17 (Laz 17); Lazaret 18 (Laz 18); Lazaret 19 (Laz 19); Lazaret 20 (Laz 20); Lazaret 21 (Laz 21); Lazaret 22 (Laz 22); Lazaret 23 (Laz 23); Lazaret 24 (Laz 24); Lazaret (Laz 25); Lazaret 26 (Laz 26); Lazaret 27 (Laz 27); Lazaret 28 (Laz 28). MNI: 6 juvenile, 9 "living" juvenile individuals, 7-11 adults.
10.1 Laz 14: Could be female, based on bone thickness.
10.2 Laz 3: young (absence of suture synostosis, low coronal angle and thinness of the bone); Laz 6: 10 to 12 years old (root morphology); Laz 5: 4 years old (crown formation); Laz 9: 10 to 12 years old (root morphology); Laz 10: 10 to 12 years old (root morphology); Laz 11: 3 years old (crown formation); Laz 12: around 10 years old (root morphology); Laz 20: 10 to 12 years old (root morphology); Laz 22: 10 to 12 years

old (root morphology); Laz 26: 12 to 20 months old (dM_2 still present); Laz 28: 10 to 12 years old (root morphology).

10.3 Laz 3: R parietal (f); Laz 16: R parietal (ff); Laz 21: L parietal (ff); Laz 24: frontal bone (f) named "Akidaya" (which means "from here and elsewhere" in Nice dialect); Laz 26: R mandible (ff) with the RdM_2; Laz 14: L humerus (ff); Laz 13: L femur (ff); Laz 15: L femur (ff) fits with Laz 17; Laz 16: R parietal (ff); Laz 17: L femur (ff) fits with Laz 15; Laz 25: L femur (ff).

10.4 Laz 1: RC_1; Laz 2: LdI^1; Laz 4: LC_1; Laz 5: Germ of a RI_2; Laz 6: LdM^2; Laz 7: LdM^2 (f); Laz 8: LM (f); Laz 9: RdM_2 ;Laz 10: LdM_2; Laz 11: Germ of a LI_1; Laz 12: RdM^1; Laz 18: LP_3 fused with the LP_4; Laz 19: LP_4 fused with the LP_3; Laz 20: RdM^2; Laz 22: RdM^2; Laz 23: LdM_1; Laz 27: LdM^1; Laz 28: LdM^2.

10.5 Laz 3: Post-traumatic injury (not a meningioma as previously proposed). Laz 18 – Laz 19: These LP_3 and P_4 have their roots fused contrary to the crown.

11. All remains and artefacts are stored at the Laboratoire de la Grotte du Lazaret, 33 bis Boulevard Franck Pilatte, 06300, Nice, France.

12. Institut de Paléontologie Humaine, 1 rue René Panhard, 75013 Paris, France; Le Musée de Tautavel – Centre européen de Préhistoire, Avenue Léon Jean Grégory, 66720 Tautavel, France; Laboratoire de la Grotte du Lazaret, 33 bis Boulevard Franck Pilatte, 06300, Nice, France.

13. –

14.1 Bones (de Lumley 2018).

14.2 Laz 13: archeostratigraphic unit 22 (high degree of contamination by modern human DNA); Laz 15: archeostratigraphic unit 26 (high degree of contamination by modern human DNA); Laz 17: archeostratigraphic unit 26 (high degree of contamination by modern human DNA); Laz 25: archeostratigraphic unit UA 28 (high degree of contamination by modern human DNA).

14.3 Laboratoire de la Grotte du Lazaret, 33 bis Boulevard Franck Pilatte, 06300, Nice, France.

14.4 –

14.5 Shotgun.

14.6 –

14.7 –

14.8 –

14.9 –

14.10 –

15. No

16. No

17. de Lumley M.A. (1973), Anténéandertaliens et néandertaliens du bassin méditerranéen occidental européen. *Etude Quaternaire* 2, 1-603. P, R; de Lumley M.A. (ed.) (2018), *Les restes humains fossiles de la grotte du Lazaret, Nice, Alpes-Maritimes, France. Des* Homo erectus *évolués en voie de néandertalisation*. CNRS Edition, Paris, 658. P, R, A, Z, G, E, D, Str; Ferembach D. (1959), L'incisive temporaire acheuléenne de la grotte du Lazaret. Nice (A.M.). Locus VIII. *Bulletin du Musée d'Anthropologie Préhistorique de Monaco* 6, 113-139 (Lazaret 2) P, R; Piveteau J. (1967), Un pariétal humain dans la grotte du Lazaret (Alpes Maritimes). *Annales de Paléontologie* 53 (2), 167-199 (Lazaret 3) P, R; Vallois H.V. (1957), La dent humaine du Lazaret. *Bulletin du Musée d'Anthropologie Préhistorique de Monaco* 4, 111-117 (Lazaret 1) P, R

Code data collected by: Bruno Maureille, Jean-Luc Voisin

1. **LE MOUSTIER**, Le Moustier abri inférieur; Le Moustier abri Peyrony

2. Rock shelter, near the village of Peyzac-Le-Moutier, Dordogne, France. 37 km South-East of Perigeux; 44°59'42" N, 01°03'56" E.

3. Leysalle for Otto Hauser, on March 7th, 1908 and on August 12th, 1908 (discovery of Le Moustier 1); Denis Peyrony on May 19th, 1914 and partially rediscovered mid-September 1996 by B. Maureille and the Musée National de Préhistoire team (discovery of Le Moustier 2).

4. Rock-shelter, mostly occupation deposits for the upper part of the stratigraphy, alluvial and occupations deposits for the lower part.

5. Yes: Le Moustier 1: burial discovered and poorly "excavated" on March 7th, April 10th, July 3rd, and finally on August 12th, 1908. Le Moustier 2: burial discovered on May 19th 1914, taken from the site in at least one block of sediment then fragmented to sample the hominin remains, and rediscovered and partially – but really – excavated in 1997 and 1998.

6. Le Moustier 1: Acheulean layer following O. Hauser stratigraphy (Hauser, 1911), layer H following D. Peyrony stratigraphy (Mousterian of Acheulean tradition); Le Moustier 2: layer J following D. Peyrony stratigraphy (Peyrony, 1930).

7.1 Mousterian.

7.2 Le Moustier 1: Discoid Mousterian; Le Moustier 2: Typical Mousterian.

7.3 Le Moustier 1: Yes according to O. Hauser but never proved.

7.4 No

7.5 No

7.6 No

7.7 Layer H (Le Moustier 1): Undocumented, but yes according to O. Hauser; Layer J (Le Moustier 2): yes, a pit dug from Layer J untill layer H (Peyrony, 1930)

8.1 Le Moustier 1: Yes according to O. Hauser but material considered as associated to the skeleton is lost. Le Moustier 2: No for the burial blocks excavated between 1997 and 1998, but Yes in the level J.

8.2 No

9.1 Le Mousteir 2: Yes, C14 (unpublished)

9.2 Layer K: 42,6 +/- 3,7 kyr (TL); Layer J: 40,3 +/- 2,6 kyr (TL,); 42,0-48,7 kyr (C14); Layer I: 40,9 +/- 5 kyr (TL); 44,6-50 kyr (C14); Layer H: H2-H9= 42,5 +/- 2 kyr (TL); Layer H1= 46,3 +/- 3,0 kyr (TL); 39,7 +/- 2,4 kyr (ESR-EU); 41 +/- 2,6 kyr (ESR-LU); Layer H= > 44,4 kyr C14; Layer G: G4= 50,3 +/- 5,5 kyr (TL), G1+ 55,8 +/- 5 kyr (TL); 43,0 +/- 2,3 kyr (ESR-EU); 47,0 +/- 2,5 kyr (ESR-LU); Layer G= > 44,6 kyr (C14).

9.3 Archaeostratigraphy and regional intersite comparisons.

10. Le Moustier 1: No ID numbers; Le Moustier 2: ID numbers unpublished. MNI = 2 for the preserved hominin remains. Le Moustier 3: probably modern (see Maureille, in press) Le Moustier 4 or Le Moustier 0: Lost and definitely modern (see Maureille, in press).

10.1 –

10.2 Le Moustier 1: young adolescent (skeletal maturation, permanent teeth calcification and eruption); Le Moustier 2: perinate (skeletal maturation).

10.3 Le Moustier 1: Not possible to account for the entire skeleton as the first anthropological study was not precise enough and, after, the infracranial skeleton was partially

destroyed at the end of World War II. Skull, still existing: frontal bone (d), maxilla (d), mandible (d), L temporal (d), L parietal bone (ff), R temporal (f), R parietal (f), occipital (ff). Post cranial skeleton: L rib 1 (ff), R scapula (ff), L clavicle (f), R humerus (ff), R ulna (ff), R radius (ff), numerous hand bones R and/or L, L femur (f), L and R patella (i), L tibia (ff), L and R fibula (ff), L metatarsal I (see the specific chapter (Thompson & Nelson) in Ullrich (2015) for more details related to the preservation of the infracranial bone fragments attributed to LM1). Le Moustier 2: Skull and axial skeleton- occipital pars squama (f), L and R occipital pars lateralis (i), occipital pars basilaris (i), L (ff) and L(i) sphenoid great wing, sphenoid corpus (i), L (ff) and R (f) parietal, R petrous bone (i), R incus (i), R stapes (f), R malleus (i), L (ff) and R (f) hemi-frontal, L and R nasal bone, L (i) and R (f) zygomatic, L (ff) and R (i) maxilla (with all the upper teeth except the LI^1-lost since the discovery) and the RC' R), L and R palatal (ff), L (ff) and R (i) hemi-mandible with all the teeth with the retained LdC_1 related to an impacted LC_1), sternebrae (i), L and R first rib (i), L (ff) and R (i) second rib, L and R third rib (i), L (ff) and R (f) fourth rib, L (ff) and R (i) fifth rib, L (ff) and R (f) sixth rib, L and R seventh rib (ff), L (f) and R (ff) eighth rib, L nineth L (i), R tenth rib (ff), cervical vertebra 1 (d), cervical vertebra 2 (d), cervical vertebra 3 (d), cervical vertebra 4 (d), cervical vertebra 5 (d), cervical vertebra 6 (d), cervical vertebra 7 (d), thoracic vertebra 1 (f), thoracic vertebra 2 (f), thoracic vertebra 3 (i), thoracic vertebra 4 (ff), thoracic vertebra 5 (f), thoracic vertebra 6 (f), thoracic vertebra 7 (f), thoracic vertebra 8 (f), thoracic vertebra 9 (f), thoracic vertebra 12 (ff), lumbar vertebra 1 (f), lumbar vertebra 2 (f), lumbar vertebra 3 (ff), lumbar vertebra 4 (ff). Shoulder girdle and upper limbs- L (ff) and R (f) clavicle, L(f) and R (i) humerus, L (i) and R (ff) ulna, L (i) and R (ff) radius, L metacarpal (i), L second metacarpal (i), L (i) and R (f) third metacarpal, L fourth metacarpal (i), L fifth metacarpal (i), L proximal phalanx ray 2 (i), L proximal phalanx ray 3 (i), L proximal phalanx ray 4 (i), L medial phalanx ray 2 (i), L distal phalanx ray 1 (i), L/R distal phalanx ray 4 (i), L distal phalanx ray 5(i). Pelvic girdle and lower limbs- L (i) and R (ff) ilium, L (f) and R (i) ischium, L (d) and R (i) femur, L (d) and R (ff) tibia, L (d) and R (ff) fibula, L metatarsal 1 (i), L metatarsal 2 or 3 (f), L metatarsal 4 (i), R proximal phalanx 1 (i). The right femur and humerus was first attributed to La Ferrassie 4 (see Maureille (2002))

10.4 Le Moustier 1: RC'; Le Moustier 2*:* germs of the: RdI_1, RdI_2, RdC_1(in its alveolar crypt), RdM_1, RdM_2, LdI_1, LdI_2, LdC_1, LdM_1, LdM_2 (fragmented), Rdi^1, RdI^2, RdC', RdM^1, RdM^2, LdI^1, LdI^2, LdC', LdM^1, LdM^2 (in its alveolar crypt).

10.5 Le Moustier 1: retained LdC_1 and impacted LC_1.

11. Le Moustier 1: Museum für vor- und Frühgeschichte archäologie Europas, Bodestraße 1, 10178 Berlin, Germany. Le Moustier 2:right humerus and femur: Musée de l'Homme, 17 place du Trocadéro, 75116 Paris, Paris, France, all the other parts of the skeleton: Musée national de Préhistoire, 1 rue du musée, 24620 Les Eyzies, France. The hominin immature skull fragment stored at the Field Museum at Chicago and inventoried as coming from Le Moustier lower rock-shelter, excavations of O. Hauser, are for sure not related to this site but are probably coming from O. Hauser excavations at Badegoule; see Maureille (1997).

12. Le Moustier 1: Musée national de Préhistoire, 1 rue du Musée, 24620 Les Eyzies-de-Tayac, France; Musée national de Préhistoire;UMR5199 PACEA, Université de Bordeaux, Allée Geoffroy Saint-Hilaire – CS 50023, 33615 Pessac cedex – France; Laboratoire d'Anthropologie et de Préhistoire, Institut Royal des Sciences Naturelles de

Belgique, Rue Vautier, 29, B-1000 Bruxelles, Belgium. Post-cranial skeletal casts made before World War II have been discovered at the Musée Louis Deroubaix (route de Lennik 808, 1070 Anderlecht, Belgium) and at the Institut Royal des Sciences Naturelles de Belgique (rue Vautier, 29, B-1000 Bruxelles, Belgium): rib 1 L, scapula R, clavicle L, ulna R, radius R, femur L, patella L, tibia L, fibula R and L, Metatarsal I L. Le Moustier 2: No available casts except the right humerus and femur which are at the Musée national de Préhistoire, 1 rue du Musée, 24620 Les Eyzies-de-Tayac, France.

13. Le Moustier 1: Digital repositories: Department of Human Evolution, Max Planck Institute for Evolutionary Anthropology, Deutscher Platz 6, D-04103 Leipzig, Germany. Le Moustier 2: Digital repositories: UMR5199 PACEA, Université de Bordeaux, Allée Geoffroy Saint-Hilaire - CS 50023, 33615 Pessac cedex – France; Musée National de Préhistoire, 1 rue du Musée, 24620 Les Eyzies-de-Tayac, France; Department of Human Evolution, Max Planck Institute for Evolutionary Anthropology, Deutscher Platz 6, D-04103 Leipzig, Germany.

14.1 No

14.2 –

14.3 –

14.4 –

14.5 –

14.6 –

14.7 –

14.8 –

14.9 –

14.10 –

15. Le Moustier 2: Yes, N and C (unpublished).

16. No

17. Ahern J. C. M., Smith F. H. (2004), Adolescent archaics or adult moderns? Le Moustier 1 as a model for estimating the age at death of fragmentary supraorbital fossils in the modern human origins debate. *Homo*, 55 (1-2), 1-19. https://doi.org/10.1016/j.jchb.2004.01.001. P; Bordes F. (1948), Les couches moustériennes du gisement du Moustier (Dordogne). Typologie et techniques de taille. *Bulletin de la Société Préhistorique de France* 45 (3-4), 113-125. https://doi.org/10.3406/bspf.1948.2322. A; Bordes Fr. (1959), Le contexte archéologique des Hommes du Moustier et de Spy. *L'Anthropologie (Paris)* 63, 154-156. A; Bourgon M. (1957), Les industries moustériennes et pré-moustériennes en Périgord. *Archives de l'Institut de Paléontologie Humaine* 27, 1-141. A; Daumas M. et al. (2021), Le Moustier 1 Neandertal – The discovery of two new sets of casts, 3D reconstruction and comparison with original fossils. *Digital Applications in Archaeology and Cultural Heritage*, 23, e00204 (9). https://doi.org/10.1016/j.daach.2021.e00204. P; Discamps E. et al. (2016), Photogrammetry as a tool for integrating archival data in archeological fieldwork: Examples from the Middle Paleolithic sites of Combe–Grenal, Le Moustier, and Regourdou. *Journal of Archaeological Sciences: Reports* 8, 268-276. https://doi.org/10.1016/j.jasrep.2016.06.004. A; Gravina B. (2017), Intra-level technological change and its implications for Mousterian assemblage variability. The example of Le Moustier, layer G. *Quaternary International* 433 Part B, 132-139. https://doi.org/10.1016/j.quaint.2016.02.061. A; Gravina B., Discamps E. (2015), MTA-B or not to be? Recycled bifaces and shifting hunting strategies at Le

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18. The Le Moustier 2 perinate is under study by B. Maureille. There are important restrictions for any manipulation of the original remains.

Code data collected by: Jean-Luc Voisin & Anne Degioanni

1. **LE PLACARD**, Grotte du Placard

2. Cave, close to the village of Moulins-sur-Tardoire, Charente, France. 23 km East from Angoulême; 45°41'23" N, 0°25'11" E.

3. Cave discovered by J. Fermond 1868 (discovery), J. Roche 1958 (discovery of Middle Palaeolithic layers).

4. Cave deposits.

5. No

6. Neandertal remains have been found in layer IV (Le Placard 22 & 25) or in the in the excavation spoil (Le Placard 23).

7.1 Mousterian.

7.2 Not studied.

7.3 No

7.4 No

7.5 No

7.6 No

7.7 No

8.1 Not studied.

8.2 No

9.1 No

9.2 No

9.3 No

10. Le Placard 22, No number (Le Placard 23), No number (n°1 or Le Placard 24), No number (n°2 or Le Placard 25), No number (n°3 or Le Placard 26, could be upper paleolithic (see Genet-Varcin, 1972), No number (n°4 or Le Placard 27 could be upper paleolithic (see Genet-Varcin, 1972). These 4 teeth have no number but Genet-Varcin named them, in her 1972 article, respectivelly n°1 to n°4.

10.1 –

10.2 Le Placard 22: 8-10 years old (tooth crown and root formation); Le Placard 23: around 12 years (teeth maturation); Le Placard 26 (n°3): 8 to 10 years old (tooth crown and root formation), Le Placard 27 (n°4): 8 to 9 years old (tooth crown and root formation).

10.3 Le Placard 23: R maxilla (ff) with dM^2.

10.4 Le Placard 22: RP_4; Le Placard 24 (n°1): RM_3; Le Placard 25 (n°2): LM_3; Le Placard 26 (n°3): LM_2 ; Le Placard 27 (n°4): LdM_2.

10.5 –

11. Was at the Laboratoire de Paléontologie des Vertébrés et de Paléontologie Humaine, Faculté des Sciences, Paris 5, France which is now closed, current location unknown.

12. –

13. –

14.1 No

14.2 –

14.3 –

14.4 –

14.5 –

14.6 –

14.7 –

14.8 –

14.9 –

14.10 –

15. No

16. No

17. Delage C. (2023), le Placard (Charente) dans les débats préhistoriques du XIXe siècle. *SERPE Bulletin* 72, 1-14. A, P; Genet-Varcin E. (1962), Évolution de la couronne de la seconde prémolaire inférieure chez les Hominidés. *Annales de Paléontologie (Vertébrés)* 48, 59-82. P; Genet-Varcin E. (1972), Étude de molaires inférieures humaines découvertes dans le gisement du Placard (Charente). Annales de Paléontologie, (Vertébrés) LVIII/1: 133-147. P; Roche J. (1965), La grotte du Placard. *Bulletin de l'Association Française pour l'Etude du Quaternaire* 2 (3-4), 245-250. https://doi.org/10.3406/quate.1965.1018. Str; Pintaud R.C. (1961), Fragment de maxillaire d'enfant présumé néanderthalien dans les déblais du Placard. *Bulletin de la Société d'Etudes et de Recherches préhistoriques et Institut pratique de Préhistoire – Les Eyzies* (Travaux de 1960) 10: 116-118 P

18. This site is famous for its Upper Paleolithic levels, parietal arts and for the history of the Upper Paleolithic. The village of Moulins-sur-Tardoire did not exist before 2019. It is the result of the fusion of two villages: Vilhonneur and Rancogne. The first 21 human remains are from the Upper Paleolithic sequence and belong to *H. sapiens sapiens.*

Code data collected by: Jean-Luc Voisin

1. **LES PRADELLES**, Aven de Marillac
2. Rock shelter (collapsed karstic cave), close to the village of Marillac-le-Franc (Charente), 25 km Est of Angoulême (Nouvelle-Aquitaine), France; 45°44'26" N, 0°25'54" E.
3. The cave was discovered a little before 1898, and was exploited by quarrymen. P. David 1934 (first excavations), B. Vandermeersch 1967 – 1980 (excavations), B. Maureille 2001 – 2012 (excavations).
4. Collapsed karstic cave, site as a hunting camp.
5. No
6. East part – UL B (Fascies 2a & 2b), UL C (Fascies 4a, 4b, 4c, 4d).

7.1 Mousterian Quina tools.
7.2 Short flake.
7.3 No
7.4 No
7.5 No
7.6 No
7.7 There may have been a fireplace in the layer containing the first discovered mandible (Ragout & Balout, 1942).
8.1 Large mammals.
8.2 No
9.1 No
9.2 ^{14}C on animal bones from UL E/F and D: >45 000 years BP end MIS 3 (Maureile et al., 2007); ^{14}C on animal bones from Unit 2a': 45 200-43 260 years BP end MIS 3 (Maureile et al., 2007); TL on a burned flint to 57 600-64 600 years BP end MIS 4 – begining MIS 3 (Frouin et al., 2017); U-Th on a stalagmitic floor from UL A: 81,96+/- 0,78 ka = MIS 5a (Frouin et al., 2017); OSL on sediments from UL C, UL A, Unit 3, 2a' and 1: 52 000 to 74 000 years (Frouin et al., 2017).
9.3 Middle Palaeolithic based on lithic technology and typology.
10. 1934 and 1935 excavations (P. David): left mandible (no catalogue number); 1967 to 1980 excavations (B. Vandermeersch): Marillac 2 (M2, M67-G12 #6), Marillac 8 (M8, M70-F10 #41), Marillac 5 (M5, M71-F10 #H02), Marillac 4 (M72-E11 #342), Marillac 6 (M6, M72-I11 #41), Marillac 10 (M10, M72-E12 #6), Marillac 9 (M9, M78-D9 #35), Marillac 7 (M7, M78-D7 #92), Marillac 3 (M3, M78-D8 #94), Marillac 12 (M12, M80-D11 #289), Marillac 11 (M11, M80-D9 #100), Marillac 21 (M21 or Marillac 24,M24, M80-D10 #54 or M80 c9b-D10 54), Marillac 22 (M22 or Marillac 25, M25, M67-G12 #3 or M67 c10-G12 3), Marillac 23 (M23 or Marillac 26 (M26, M80-D11 #291 or M80–c10 D11 54). No individual attribution: M #H02. 2001 to 2012 excavations (B. Maureille): LP01-D8 #H02; LP01-D11 #H03; LP01-C11 #H04; LP01-E12 #H05; LP01-E11 #H06; LP01-D9 #H07; LP02-E12 #1; LP02-E12 #2; LP02-E12 #5; LP03-D11 #96 to 125; LP04-D12 #113; LP04-D12 #314; LP04-D12 #352; LP04-D12 #718; LP04-D12 #719; LP04-D12 #751; LP04-D12 #HT05; LP05-E12 #H10; LP05-D12 #1053; LP05-D12 #1059; LP05-D12 #1069; LP06-C9 #770; LP06-C9 #959; LP06-C10 #535; LP07-C9 #1228; LP07-C11 #44; LP07-C10 #776; LP07-C10 #790; LP07-Z7 #1092; LP07-C12 #812; LP09-C11/D11 #H12; LP10-C7 #1682; LP10-C13 #107; LP10-C13 #108; LP10-C13 #109; LP10-C12 #1354; LP05-D9 #H11; LP02-D13 #2; LP06-A7 #796; LP05-D12 #1170; LP10-C11 #1931; LP10-C11 #1939; LP06-C06 #273; LP09-D06 #415; LP10-D13 #362; LP06-D12 #1434; LP03-D15 #001; LP04-D11 #263; LP04-D11 #191; LP04-D11 #217; LP05-E12 #H08. MNI: 7

10.1 –
10.2 Marillac 13: around 15 years age (tooth wear and root development); M67-G12 #3 or M67 c10-G12 3 or Marillac (M22) or Marillac (M25): immature (length, robustness, and other measurements of the bones); LP01-E12 #H05: immature (bone thickness and overall morphology); LP02-E12 #2: immature (compact bone and an invisble diploe); LP02-E12 #5: immature (compact bone and an invisble diploe); LP04-D12 #113: immature (?) (size); LP04-D12 #352: immature (?) (size); LP04-D12 #751: immature (?) (size); LP05-D12 #1053: immature (overall morphology and low bone thickness); LP05-D12 #1059: immature (overall morphology and low bone thickness); LP05-D12 #1069: immature (overall morphology and low bone thickness); LP07-C9 #1228: immature (?) (bone thickness); LP07-C11 #44: immature (bone thickness); LP10-C7 #1682: immature (bone thickness).
10.3 1934 and 1935 excavations (P. David): no catalogue number: L mandible (ff). 1967 to 1980 excavations (B. Vandermeersch): Marillac 2 (M2, M67-G12 #6): occipital (ff) and 2 parietals (ff); Marillac 8 (M8, M70-F10 #41): parietal (ff); Marillac 5 (M5, M71-F10 #H02): cranial vault fragment (ff); Marillac 4 (M4, M72-E11 #342): two parietals (10 fragments, upper part of bones, ff); Marillac 6 (M6, M72-I11 #41): cranial vault fragment (ff); Marillac 10 (M10, M72-E12 #6): frontal fragment (ff); Marillac 9 (M9, M78-D9 #35): parietal (ff); Marillac 7 (M7, M78-D7 #92): parietal (ff); Marillac 3 (M3, M78-D8 #94): R frontal (ff) and R parietal (ff); Marillac 12 (M12, M80-D11 #289): R mandible (ff); Marillac 11 (M11, M80-D9 #100): L zygomatic bone (f); Marillac 21 (M21, or Marillac 24-M24, M80-D10 #54): R radius (ff); Marillac 22 (M22, or Marillac 25- M25, M67-G12 #3 or Marillac 22- M22): femur (ff); Marillac 23 (M23, or Marillac 26- M26, M80-D11 #291, or Marillac 23- M23): L fibula (ff); No individual attribution: M #H02: frontal bone (?) (ff); – 2001 to 2012 excavations (B. Maureille): LP01-D8 #H02: R temporal (f); LP01-D11 #H03: R maxilla (ff) with C to M^3; LP01-C11 #H04: L occipital (ff), fits with LP03-D11 #96 to 125; LP01-E12 #H05: L occipital (ff); LP01-E11 #H06: L occipital (ff); LP01-D9 #H07: R occipital (ff); LP02-E12 #1: L temporal (ff); LP02-E12 #2: parietal (ff) (?); LP02-E12 #5: parietal (ff); LP03-D11 #96 to 125: various fragments of the same occipital (ff) fit with LP01-C11 #H04; LP04-D12 #113: L parietal (f), fits with LP04-D12 #352 and LP04-D12 #751; LP04-D12 #314: R parietal; LP04-D12 #352: L occipital (f), fits with LP04-D12 #113 and LP04-D12 #751; LP04-D12 #718: R parietal (ff); LP04-D12 #719: R parietal (ff); LP04-D12 #751: L parietal (ff); LP04-D12 #113 and LP04-D12 #352; LP04-D12 #HT05: parietal or occipital (ff); LP05-E12 #H10: R frontal (ff); LP05-D12 #1053: parietal (ff), fits with LP05-D12 #1059 and LP05-D12 #1069; LP05-D12 #1059: R frontal (ff), fits with LP05-D12 #1053 and LP05-D12 #1069; LP05-D12 #1069: R parietal (ff), fits with LP05-D12 #1053 and LP05-D12 #1059; LP06-C9 #770: L occipital (ff); LP06-C9 #959 R parietal (ff); LP06-C10 #535: R parietal (?) (f/ff); LP07-C9 #1228: R temporal (?); LP07-C11 #44: L parietal (ff) (?); LP07-C10 #776: R temporal (ff); LP07-C10 #790: L parietal (ff); LP07-Z7 #1092: R parietal (ff); LP07-C12 #812: R parietal (ff) fits with LP09-C11/D11 #H12; LP09-C11/D11 #H12: R parietal (ff) fits with LP07-C12 #812; LP10-C7 #1682: L parietal (ff); LP10-C13

#107: R parietal (ff) fits with LP10-C13 #108, LP10-C13 #109 and LP10-C12 #1354; LP10-C13 #108: R parietal (ff) fits with LP10-C13 #107, LP10-C13 #109 and LP10-C12 #1354; LP10-C13 #109: R parietal (ff) fits with LP10-C13 #107, LP10-C13 #108 and LP10-C12 #1354; LP10-C12 #1354: R parietal (ff) fits with LP10-C13 #107, LP10-C13 #108 and LP10-C13 #109; LP05-D9 #H11: maxilla (?) (ff); LP02-D13 #2: mandibular alveolar margin (external side), fits with the P^3 LP01-D13 #1; LP06-A7 #796: proximal hand phalanx; LP05-D12 #1170: middle hand phalanx (ray III or ray IV); LP10-C11 #1931: distal hand phalanx; LP10-C11 #1939: distal hand phalanx, ray 1; LP06-C06 #273: L femur (ff); LP09-D06 #415: femur (ff); LP10-D13 #362: L femur (ff); LP06-D12 #1434: R femur (ff); LP03-D15 #001: R patella; LP04-D11 #263: R tibia (ff); LP04-D11 #191: R tibia (ff); LP04-D11 #217: R tibia (ff); LP05-E12 #H08: L middle cuneiforme (i).

10.4 No catalogue number: I2 (?) (i): lost (a picture in Mussini, 2011); M71 C.10-F12 93 or M71-F12 #93: RI^1 (Marillac 13A known also as M13A); M71 C.10-F12 93 or M71-F12 #93: LI^1 (Marillac 13B known also as M13B); M71 C.10-F12 93 or M71-F12 #93: RI^2 (Marillac 13C known also as M13C); M71 C.10-F12 93 or M71-F12 #93: LI^2 (Marillac 13D known also as M13D); M71 C.10-F12 93 or M71-F12 #93: RC^1 (Marillac 13E known also as M13E); M70 C.9base-F13 3 or M70-F13 #2: LP^3 (Marillac 13F known also as M13F); M70 C.9base-F13 2 or M70-F13 #2: LP^4 (Marillac 13G known also as M13G); Marillac 14 (M14, M72-E9 #284): RdI_2; M72 C.10-E11 336 or M72 C.10-E11 #336: RI^1 [partially digested tooth]; Marillac 15 (M15, M70 C.10-F12 54 or M70 C.10-F12 #54): RI^2 [partially digested tooth]; Marillac 16 (M16, M75 C.11-H9 3): germ LI^2 [partially digested tooth]; Marillac 17 (M17, M78 C.9a-D11 21 or M70-F12 #54): RI^2; Marillac 18 (M18, M72 C.11-I10 22): germ LP^3 [Partially digested tooth]; Marillac 19 (M19, could belong to Marillac 13- M13H; M71 C.9base-F12 73): LM_3; Marillac 20 (M20, M71 C.10 ?): LM_2 [partially digested tooth], Marillac 21 (M21, M72 C.10-E9 284): RdI_2; Marillac 22 (M22, M73 C.10-E10 ?): LdM_1. Not attributed to any individual (excavation 2001 – 2012): LP01-E10 #H01: LM_1 or M_2; LP01-D13 #1: RP_4; LP01-D11 #H03: C' to M^3 (still in maxillary bone); LP03-D10 #287: dM^2; LP04-D12 #411: RdM_1; LP04-D11 #163: RP^4; LP05-D12 #1307: RM_3 germ; LP05-Z8 #HT01: dM^1 (?) (ff); LP06-A7 #501: RM_2; LP06-Z7 #475: LPM_3; LP06-D6 #HT02: germ (?) dM^2 (?); LP06-C10 #430: R germ (?) P^3 (?); LP06-C10 #431: R germ (?) P_4 (?); LP07-C9 #1382: LdC'; LP07-C9 #HT03: RdI^2; LP07-C9 #1462: LM^2 germ; LP07-C11 #87: RC'; LP07-C07 #HT04: LdM^2 (ff).

10.5 No catalogue number: left mandible: oral diseases. Marillac 3 (M78-D8 #94): right frontal and right parietal fragment: hyperostosis frontalis interna grade 2 (type B)

11. Remains are provisionally housed at the PACEA Laboratory, UMR PACEA 5199 – Universite de Bordeaux, Bâtiment B2, Allée Geoffroy Saint-Hilaire CS 50023, 33615 Pessac Cedex, France.

12. –

13. –

14.1 DNA analysis from fragments LP06-C6 #273, LP07-C11 #44 and LP10-D13 #263

14.2 –

14.3 –

14.4 –

14.5 –

14.6 –

14.7 –

14.8 –

14.9 –

14.10 –

15. Bone fragments – strontium isotope (Kelly et al., 2007, Mann and Maureille, 2007); Fragment of cranial bones – carbon and nitrogene isotopes (Bocherens et al., 1991; Fizet et al.,1995).

16. No

17. Bahain J.-J., et al. (2020), ESR and ESR/U-series chronology of the Middle Pleistocene site of Tourville-la-Rivière (Normandy, France) – A multi-laboratory approach, *Quaternary International* 556, 66.78, https://doi.org/10.1016/j.quaint.2019.06.015. D; Bocherens H., et al. (1991), Isotopic biogeochemistry (13C,15N) of fossil vertebrate collagen: application to the study of a past food web including Neandertal man. *Journal of Human Evolution* 20 (6), 481-492. S; David P. (1935), Les fouilles de l'abri-repaire de Marillac, près de la Rochefoucault. *Bulletins et Mémoires de la Société* d'Archéologie et d›Histoire de la Charente 89-90. A; Fizet M., et al. (1995), Effect of diet, physiology and climate on carbon and nitrogen stable isotopes of collagen in a late pleistocene anthropic palaeoecosystem: Marillac, Charente, France. *Journal of Archaeological Science* 22 (1), 67-79. https://doi.org/10.1016/S0305-4403(95)80163-4. S: Garralda M.G., et al. (in prep), Neanderthal cranial and manidbular remains from Marillac (Charente, Southwestern France). R, P; Mann A., Maureille B. (2007), Les Néandertaliens européens. In: Vandermeersch B., Maureille B. (Eds.). *Les Néandertaliens. Biologie et Cultures*, CTHS, Paris, 69-85. S; Maureille B. et al.(2007), *Le gisement moustérien des Pradelles (Marillac-le-Franc, Charente): passé, présent, futur.* Meeting proceeding: Un siècle de construction du discours scientifique en préhistoire, Avignon (France), vol 3, 249-261. A, Str; Frouin M. et al. (2017), Chronologie du site moustérien de type Quina des Pradelles (Marillac-le-Franc, Charente, France). *Paleo* 28, 117-136. https://doi.org/10.4000/paleo.3111 D; Garralda M.G., et al. (2014), Hyperostosis frontalis interna in a Neandertal from Marillac (Charente, France). *Journal of Human Evolution* 67, 76-84. https://doi.org/10.1016/j.jhevol.2013.12.003. P; Garralda M.D., et al. (2020), The Neanderthal teeth from Marillac (Charente, Southwestern France): morphology, comparisons and paleobiology. *Journal of Human Evolution* 138, 102683 (27) https://doi.org/10.1016/j.jhevol.2019.102683. P, R; Kelly T.E., et al. (2007), *Strontium isotope tracing in animal teeth at the Neanderthal site of Les Pradelles, Charente, France.* Honours Dissertation, The Australian National University. D, S; Mussini C. (2011), *Les restes humains moustériens des Pradelles (Marillac-le-Franc, Charente, France): étude morphométrique et réflexions sur un aspect comportemental des Néandertaliens*. PhD, 478. P, R; Piveteau J., Dechaseaux C. (1957), *Traité de paléontologie – Tome VII: primates, paléontologie humaine*. Masson, Paris, 675. P, R; Ragout A., Balout L. (1942), Enquête sur le gisement moustérien de Marillac (Charente). *Bulletin de la Société Préhistorique de France* 39 (3-4), 105-113. A

Code data collected by: Jean-Luc Voisin, Irka Hajdas, Pere Gelabert

1. **LES ROCHERS-DE-VILLENEUVE**
2. Cave close of Lussac-les-Châteaux, Vienne, France, 40 km South East of Poitiers, France; 46°24’54”N, 0°44’27”E.
3. P. Boutin and A. Chollet 1969 (discovery); C. Beauval 1999 – 2003 (excavations).
4. Hyena den and occupation deposits.
5. No
6. Level J
7.1 Mousterian.
7.2 Not studied.
7.3 No
7.4 No
7.5 No
7.6 No
7.7 No
8.1 Large mammals .
8.2 No
9.1 RdV1 (hominin bone), C14, 45,200 ± 1,100 BP yrs BP (OxA-15257), layer J, Beauval et al. 2006.
9.2 No
9.3 No
10. Rochers-de-Villeneuve 1 (RdV 1 or RDV02-H8-51).
10.1 –
10.2 Late adolescent or adult (dense and smooth subperiosteal surface, the marked cortical thickness, and its diaphyseal dimensions).
10.3 RdV 1: L femur (ff) (has carnivore toothmarks).
10.4 –
10.5 –
11. Laboratory, UMR PACEA 5199 – Universite de Bordeaux, Bâtiment B2, Allée Geoffroy Saint-Hilaire CS 50023, 33615 Pessac Cedex, France.
12. –
13. –
14.1 Bone.
14.2 RdV 1
14.3 N/A
14.4 N/A
14.5 Mitochondrial.
14.6 None
14.7 N/A
14.8 N/A
14.9 N/A
14.10 N/A
15. Yes – C ($\delta^{13}C$) and N ($\delta^{15}N$) (Beauval et al. 2006).
16. No

17. Airvaux, J., et al. (2012), Le site du Moustérien récent de La Ganne à Mazerolles et les repaires d’hyènes des Plumettes et des Rochers de Villeneuve à Lussac-les-Châteaux (Vienne). Hypothèses sur la relation Homme – Carnivores. *Bulletin Préhistoire du Sud-Ouest*, 20 (1), 3-37. A, Z; Beauval, C., et al. (2006), Direct radiocarbon dating and satble isotopes of the neanderthal femur from les Rochers-de-Villeneuve (Lussac-les-Châteaux, Vienne). *Bullins et Mémoires de la Société d’Anthropologie de Paris*, 18 (1-2), 35-42. https://doi-org/10.4000/bmsap.1292. D, S; Beauval, C., et al. (2005), A late Neandertal femur from Les Rochers-de-Villeneuve, France. *Proceedings of the National Academy of Sciences (USA)*, 102 (20), 7085-7090. https://doi.org/10.1073/pnas.0502656102. P, R, A, G

Code data collected by: Giulia Marciani, Erica Piccirilli, Marco Peresani, Stefano Benazzi

1. **LEUCA**, Grotta delle Tre porte, Grotta del Bambino
2. Karstic System, 4.30 m asl, West of Capo di Leuca near Santa Maria di Leuca (Lecce, Italy), 39° 47' N 18° 22' E.
3. A.C. Blanc and co-workers, October 15, 1958.
4. Red-violet sandy soil partially covered by speleothem and overlying the Tyrrhenian beach (Blanc 1961).
5. No
6. No stratigraphic information for Leuca 1 specimen.
7.1 Mousterian.
7.2 N/A
7.3 No
7.4 No
7.5 No
7.6 No
7.7 No
8.1 Large mammals (Cardini 1961).
8.2 No
9.1 No
9.2 No
9.3 Early Würm following the Post-Tyrrhenian II marine regression but before the local extinction of *Elephas antiquus* (Blanc 1961).
10. Leuca 1.
10.1 –
10.2 Leuca 1: juvenile, about 10 years old (based on dental maturation).
10.3 –
10.4 Leuca 1: LM_2 with small residual root portions.
10.5 –
11. Istituto Italiano di Paleontologia Umana, presso il Convitto Nazionale Regina Margherita, in Piazza R. Bonghi 2, Anagni, Italy.
12. –
13. –
14.1 –
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No

17. Blanc A.C. (1961), L'ottavo reperto neandertaliano d'Italia ed il primo del Salento: un dente infantile associato con industria musteriana e fauna ad Elefante e Rinoceronte nella Grotta delle Tre Porte al Capo di Leuca. *Quaternaria V* (1958 – 61): 313-314. A, P; Blanc A.C. (1961), Leuca I. Il primo reperto fossile del Salento. Puglia meridionale Italia. *Quaternaria V* (1958 – 61): 271-278. A, P; Cardini L. (1961), Prime determinazioni delle faune dei nuovi giacimenti costieri musteriani del Capo di Leuca. *Quaternaria V* (1958 – 61): 314-315. Z

Code data collected by: Francesca Romagnoli, Florent Rivals

1. **LEZETXIKI**
2. Spain; 43°13' N, 2°30' W.
3. J. M. de Barandiarán 1956.
4. Cave deposits.
5. No
6. Level III/IV.
7.1 Mousterian.
7.2 Not studied.
7.3 No
7.4 No
7.5 Yes (2 fragments [human selection and transport], 2 fragments [possible anthropic modifications]; Arrizabalaga, et al., 2011).
7.6 No
7.7 No
8.1 Large mammal.
8.2 No
9.1 No
9.2 Level IIIb minimum dates of 46.5 ky BP (14C, calibration using the IntCal20 calibration curve in OxCal 4.4). Problems with dating and stratigraphic correlations.
9.3 No
10. Lz.15C.505; Lz.16A-488.70-0.
10.1 –
10.2 Both adult (based on dental analysis).
10.3 –
10.4 Lz.15C.505: RM^1; Lz.16A-488.70-0: LP_3.
10.5 –
11. Arkeologi Museoa, Mallona Galtzada, 2, Ibaiondo, 48006 Bilbo, Bizkaia, Spain.
12. –
13. –
14.1 –
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No
17. Álvarez-Alonso, D., Arrizabalaga, A. (2012), La secuencia estratigrafica inferior de la cueva de Lezetxiki (Arrasate, Pais Vasco). Una reflexion necesaria. *Zephyrus* 69, 15-39. A; Arrizabalaga, A., et al. (2004), Retorno a Lezetxiki (Arrasate, Pais Vasco): Nuevas perspectivas de la investigacion. In: Santonja, M., Perez-Gonzalez, A., Machado, M.J. (Eds.). *Geoarqueologia y Patrimonio en la peninsula Iberica y el entorno mediterraneo*, ADEMA, Madrid, 20-26. A; Arrizabalga, A. et al. (2011), Spondylus sp. at Lezetxiki Cave (Basque Country, Spain): First Evidence of its use in Symbolic Behaviour during the Aurignacian in Europe, in: Ifantidis, F., Nikolaidou, M. (Coor.), *Spondylus in Prehistory: New Data and Approaches – Contributions to the Archaeology of Shell Technologies,* Chapter 2, B.A.R. International Series S2216, Oxford, 11-16. A; Baldeón, A. (1993), El yacimiento de Lezetxiki (Guipuzkoa, País Vasco): los niveles musterienses. *Munibe* 45, 3-97. A; Barandiaran, J.M. (1963), Exploracion de la cueva de Lezetxiki (campana de 1962). *Munibe* 15, 87-102. A; De la Rúa, C., et al. (2016), Direct U-series analysis of the Lezetxiki humerus reveals a Middle Pleistocene age for human remains in the Basque Country (northern Iberia). *Journal of Human Evolution* 93, 109-119. A, D, P; Falguères, C., et al. (2005), La Geocronologia del yacimiento pleistocenico de Lezetxiki (Arrasate, Pais Vasco). Critica de las dataciones existentes y algunas nuevas aportaciones. *Munibe* 57, 93-106. A; Garralda, M.D. (2005), Los Neandertales en la Peninsula Iberica. *Munibe* 57, 289-314. A; Higham, T. F. G., et al. (2014), The timing and spatio-temporal patterning of Neanderthal disappearance. *Nature*, 512, 306-309, D; López-Onaindia, D., et al. (2023), Neanderthal teeth from Lezetxiki (Arrasate, Iberian Peninsula): New insights and reassessment. *American Journal of Biological Anthropology* 180(4), 745-760. P; Rofes, J., et al. (2012), The southwesternmost record of Sicista (Mammalia; Dipodidae) in Eurasia, with a review of the palaeogeography and palaeoecology of the genus in Europe. *Palaeogeography, Palaeoclimatology, Palaeoecology* 348, 67-73. A., Z

Code data collected by: Francesca Romagnoli, Florent Rivals

1. **LOS CASARES**
2. Spain; 40°56'N, 2°17'W.
3. C. Puig y Larraz 1894; J. Cabré 1934; I. Barandiarán 1973.
4. Cave deposits.
5. No
6. Layer c in Seno A. Seno A is an interior chamber, found after leaving the vestibule and passing a narrow gallery about 20 m long.
7.1 Mousterian.
7.2 Levallois.
7.3 No
7.4 No
7.5 No
7.6 No
7.7 No
8.1 Large mammals, small mammals.
8.2 Herbaceous, shrubs/trees (based on pollen analysis; Alcaráz-Castaño et al., 2017).
9.1 No
9.2 44.9–42.2 ka cal BP (C14 on charcoal in Seno A - leyer c); 48 052 ± 187 ka cal BP (U/Th, speleothem deposits, *terminus post quem* for the Mousterian assemblage in layer c) (Alcaráz-Castaño et al. 2017).
9.3 –
10. CAS-8V31.
10.1 –
10.2 –
10.3 CAS-8V31: metacarpal bone.
10.4 –
10.5 –
11. National Museum of Archaeology, C/ Serrano 13, Madrid, Spain.
12. –
13. –
14.1 –
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No
17. Alcaráz-Castaño et al., (2017), A context for the last Neandertals of interior Iberia: Los Casares cave revisited. *PloS ONE* 12(7), e0180823. A, P, Z, E; Barandiarán I., (1973),

La cueva de Los Casares (Riba de Saelices, Guadalajara). Excavaciones Arqueológicas en España, 76. Madrid: Ministerio de Educación y Ciencia. A, P.; Cabré J., (1934), Las cuevas de los Casares y de la Hoz. *Archivo Español de Arte y Arqueología* X, 225-254. A; Puig y Larraz C., (1894), Cavernas y simas de España. *Boletín de la Comisión del Mapa Geológico de España*. Tomo II, segunda serie. Madrid. A

Code data collected by: Jean-Luc Voisin

1. **MACASSARGUE**, Grotte de la Verrerie, Verrerie de Macassargue
2. La Verrie cave, close to the village of Montmirat, Gard, France, 30 km W from Nîmes, France; Coordinates: ?
3. C. Hugues C., S. Garimond 1947.
4. Cave deposits.
5. No
6. Level 5.
7.1 Mousterian.
7.2 Levallois.
7.3 No
7.4 No
7.5 No
7.6 No
7.7 Fire places (level 5).
8.1 Not studied.
8.2 No
9.1 No
9.2 No
9.3 None
10. Two fragmentary bones and one tooth of the same individual.
10.1 –
10.2 13 to 14 years on the basis of incomplete formation of the M2 roots, incomplete ossification of the head of the radius and the small size of the humeral fragment.
10.3 Macassargues 2: L humerus (ff); Macassargue 1: L radius (ff).
10.4 Macassargue 3: LM_2.
10.5 –
11. Musée de Tautavel, EPCC, Centre Européen de Préhistoire,Avenue Léon-Jean Grégory, 66720, Tautavel, France.
12. –
13. –
14.1 No
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No

17. de Lumley M.A. (1973), Anténéandertaliens et néandertaliens du bassin méditerranéen occidental européen. *Etude Quaternaire*, 2, 1-603. P, R; Hugues C., et al. (1951), La grotte de la verrerie à Macassargues-Montmirat (Gard). *Annales de Paléontologie*, 37, 155-174. Str, A; Piveteau J. (1951), Restes humains de la grotte de la Verrerie, à Macassargues (Gard). *Annales de Paleontologie*, 37: 177-183. P, R
18. The name Macassargue covers three caves, the Grotte de la Verrerie, the Grotte Tunnel and the Grande Grotte, which are side by side and interconnected. Only the Grotte de la Verrerie contains Neandertal remains.

Code data collected by: Giulia Marciani, Erica Piccirilli, Marco Peresani, Stefano Benazzi

1. **MADONNA DELL'ARMA**

2. Province of Imperia, in Western Liguria, Italy, near the seaside towns of San Remo and Taggia; 43° 49' N, 7° 45' E.

3. G. Isetti and H. de Lumley 1961 – 1962 (excavations).

4. Cave deposits (30-meter deep cavity, was formed in Upper Pliocene littoral con glomerates).

5. No

6. Unit III (Kaniewski et al., 2005).

7.1 Archaic Mousterian in the stratigraphical unit II; Levallois-type Mousterian with many scrapers in the stratigraphical unit III ;Levallois-type Mousterian with many nucleus and scrapers in the stratigraphical unit IV (Isetti et al. 1962).

7.2 Levallois in stratigraphical units III and IV (Isetti et al. 1962).

7.3 No

7.4 No

7.5 No

7.6 No

7.7 Fireplace (Hearth A) in Layer II (Mousterian level dated to the very beginning of the Upper Pleistocene).

8.1 Large mammals (Kaniewski et al., 2005; Giacobini et al., 2022).

8.2 Mediterranean pre-steppic forest (*Pinus, Quercus ilex* and several herbs) (Kaniewski et al., 2005).

9.1 No

9.2 Unit I is dated between 149,000 ± 15,000 years BP and 95,000 ± 5,000 years BP using the U/Th method on *S. bubonius* shells. The main archaeological layer in the cave (stratigraphical unit III) is dated between 91,000 ± 5,200 years BP and 73,100 ± 4,400 years BP using both U/Th and ESR methods on bones. Stratigraphical unit IV dates after 73,100 ± 4,400 years BP and is considered early Weichselian in age. (Blanchin, 1999).

9.3 Unit IV: MIS 5a to MIS 4 (Levallois-type Mousterian tools).

10. Madonna dell'Arma 1, Madonna dell'Arma 2, Madonna dell'Arma 2b (probably the same individual), Madonna dell'Arma 3.

10.1 Madonna dell'Arma 1, 2 and 2b: male (morphology).

10.2 Madonna dell'Arma 1, 2 and 2b: adult (morphology).

10.3 Madonna dell'Arma 1: L zygomatic bone; Madonna dell'Arma 2: fragment of L occipital bone; Madonna dell'Arma 2b: fragment of L occipital bone. Madonna dell'Arma 3 (number given by the editors): fragment of frontal bone with the L orbital border.

10.4 –

10.5 –

11. –

12. –

13. –

14.1 No

14.2 –

14.3 –

14.4 –

14.5 –

14.6 –

14.7 –

14.8 –

14.9 –

14.10 –

15. No

16. No

17. Blanchin, B. (1999), Datation des niveaux supérieurs du remplissage de la grotte de Madonna dell'Arma: Application des méthodes du déséquilibre dans les familles de l'uranium (U-Th) et de la résonance de spin électronique (ESR). *Mémoire de DEA, Muséum National d'Histoire Naturelle*, Paris, 45. D; Debaene, G. (1999), Sédimentologie et stratigraphie du site de la Madonna dell'Arma. *Mémoire de DEA, Muséum National d'Histoire Naturelle*, Paris, 69. A, E; Giacobini, G., et al. (2022), Les Néandertaliens de la région liguro-provençale. *Bulletin du Musée d'Anthropologie Préhistorique de Monaco*, 61, 157-161. P; Isetti, G., et al. (1962), Il giacimento musteriano della grotta dell'Arma presso Bussana (San Remo). *Rivista di Studi Liguri*, 28: 112. A; Kaniewski, D., et al. (2005), Palaeovegetation from a Homo neanderthalensis occupation in Western Liguria: archaeopalynology of Madonna dell'Arma (San Remo, Italy). *Journal of Archaeological Science*, 32(6): 827-840. E. Cauche, D. (2002), *Les cultures moustériennes en Ligurie italienne: études des industries lithiques des grottes de la Madonna dell'Arma, d'Arma delle Manie et de Santa Lucia Superiore* (Doctoral dissertation, Université de la Méditerranée-Aix-Marseille II). A, P

Code data collected by: Jean-Luc Voisin, Anna Degioanni

1. **MALARNAUD**
2. Cave near the village of Montseron, 20 km NE of Saint-Girons (Ariège), France; 43°00' N, 1°20' E.
3. F. Regnault & A. Bourret 1888 (site discovery).
4. Cave deposits.
5. No
6. The mandible and vertebra not found in stratigraphic sequence.
7.1 No
7.2 –
7.3 No
7.4 No
7.5 No
7.6 No
7.7 No
8.1 Large mammals.
8.2 No
9.1 No
9.2 No
9.3 No
10. Malaranaud 1: mandible; Marlarnaud 2: vertebra?
10.1 –
10.2 Malaranaud 1: adolescent, at least 13 years old (tooth wear).
10.3 Malarnaud 1: mandible (f) with RM_1 and the two germs of the M_3 still included. Malarnaud 2: vertebra (?) (ff).
10.4 RM_1 still in the mandible. Germs of the two M_3 included.
10.5 –
11. Malarnaud 1: Musée de l'Homme, 17 Place du Trocadéro, 75016 Paris, France. Malarnaud 2: Muséum d'Histoire Naturelle de Bordeaux, 5 place Bardineau, 33000 Bordeaux, France.
12. Malarnaud 2: Musée de l'Homme, 17 Place du Trocadéro, 75016 Paris, France. No cast known for Malarnaud 2.
13. CT scans made by J. Granat in the 90s are lost.
14.1 –
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. –
16. –

17. Boule M. (1889), La caverne de Malarnau, près de Montseron. *Bulletin de la Société Philomatique de Paris*, Série 8, 1(1), 83-90. D; Filhol H. (1889), Note sur une mâchoire humaine trouvée dans la caverne de Malarnaud. *Bulletin de la Société Philomatique de Paris*, Série 8, 1(1), 69-82. P R; Heim J.-L., Granat J. (1995), La mandibule de l'enfant néandertalien de Malarnaud (Ariège) – Une nouvelle approche anthropologique par la radiographie et la tomodensimétrie. *Anthropologie et Préhistoire*, 106, 75-96. P R; Pales L. (1958) Les néandertaliens en France. In von Koenigswald G.H.R. (Ed.) *Hundert Jahre Neanderthaler*, Utrecht, 32-37. Patou-Mathis M. (2018), *Neandertal de A à Z*. Allary édition, Paris, 623. P A; Piveteau J., Dechaseaux C. (1957), *Traité de paléontologie, Tome VIII – Primates paléontolgie humaine*. Masson, Paris, 675. P

Code data collected by: Katerina Harvati, Carolin Röding, Paraskevi Elefanti

1. **MEGALOPOLIS BASIN**
2. Arcadia, Peloponnese, Greece; 37°23’20” N, 22°5’31” E.
3. J. D. Becker-Platen and E. Drechhoff 1962 – 1963; O. Sickenberg 1973; G. Marinos, 1975.
4. Other (surface find most probably originating from lacustrine deposits).
5. No
6. Surface find.
7.1 No
7.2 No
7.3 No
7.4 No
7.5 No
7.6 No
7.7 No
8.1 Large mammal; small mammal (all surface finds).
8.2 No
9.1 No
9.2 No
9.3 Relative dating based on faunal assemblage (problematic as all were surface finds). ‘Biharium’ (Sickenberg, 1976) translates roughly to the lower half of the Middle Pleistocene and the Early Pleistocene.
10. Megalopolis molar (no catalogue number) (NEA lineage is most likely but not certain).
10.1 –
10.2 Adult (M3, wear)
10.3 f
10.4 LM^3: tooth crown with occlusal wear and missing root.
10.5 No
11. Human remains: Museum of Palaeontology and Geology, Oulof Palme, Zografou 157 72, Greece.
12. No
13. No
14.1 No
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No

17. Marinos, G. (1975), Über einen menschlichen Zahn unter den Säugetier-Resten biharischen Alters von Megalopolis. *Annales Géologiques des Pays Helléniques* 27: 64–65. P; Sickenberg, O. (1976), Eine Säugetierfauna des tieferen Bihariums aus dem Becken von Megalopolis (Peloponnes, Griechenland). *Annales Géologiques des Pays Helléniques* 27: 25-63. Z; Xirotiris, N., et al. (1979). Der M^3 von Megalopolis – ein Beitrag zu seiner Morphologischen Kennzeichnung. *Zeitschrift für Morphologie und Anthropologie* 70: 117-122. P; Röding, C., et al. (2021), Crown outline analysis of the hominin upper third molar from the Megalopolis Basin, Peloponnese, Greece. In: Harvati, K., Reyes-Centeno, H. (eds.) *Ancient Connections in Eurasia*, Tübingen: Kerns Verlag, 13-36. P

Code data collected by: Giulia Marciani, Erica Piccirilli, Marco Peresani, Stefano Benazzi

1. **MOLARE**, Riparo del Molare, Scario, Molare Rockshelter
2. Between Scario (S. Giovanni a Piro) and Marina di Camerota (Salerno, Campania, Italy); 40°02'21" N, 15°28'32" E.
3. Research Unit of Prehistory and Anthropology of the Department of Physical Sciences, Earth and Environment of the University of Siena 1984 (excavations); A. Ronchitelli 1985 (discovery of the fossil).
4. Cave deposit.
5. No
6. Layer 51 (Mallegni e Ronchitelli, 1987).
7.1 Mousterian.
7.2 Levallois, SSDA (Aureli- Ronchitelli 2018).
7.3 No
7.4 No
7.5 No
7.6 No
7.7 No
8.1 Large mammals (Mallegni e Ronchitelli, 1989).
8.2 No
9.1 No
9.2 No
9.3 To MIS 5d-a (based on its stratigraphic relationship with the MIS 5e marine conglomerate, supported by sedimentological, chrono-stratigraphic, and faunal studies; Spagnolo et al. 2020).
10. Mandible.
10.1 –
10.2 Juvenile, 3-4 yrs (dental eruption).
10.3 Incomplete mandible, lacking left distal corpus and ramus and large part of right ramus (f).
10.4 R and LdM_1, R and LdM_2.
10.5 –
11. U. R. Preistoria e Antropologia. Università degli Studi di Siena Dipartimento di Scienze Fisiche, della Terra e dell'Ambiente Via Laterina, 8, 53100, Siena, Italia.
12. U. R. Preistoria e Antropologia. Università degli Studi di Siena Dipartimento di Scienze Fisiche, della Terra e dell'Ambiente Via Laterina, 8, 53100, Siena, Italia.
13. –
14.1 –
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –

14.9 –
14.10 –
15. No
16. No
17. Aureli, D., Ronchitelli, A. (2018), The Lower Tyrrhenian Versant: was it a techno-cultural area during the Middle Palaeolithic? Evolution of the lithic industries of the Riparo del Molare sequence in the frame of Neanderthal peopling dynamics in Italy. In: *Palaeolithic Italy* (Eds. Borgia & Cristiani*),* Leiden, Sidestone Press Academics 59-99. A; Mallegni, F., Ronchitelli, A.M. (1987), Découverte d'une mandibule néandertalienne à l'Abri du Molare près de Scario (Salerno, Italie): observations stratigraphiques et palethnologiques, étude anthropologique*. L'Anthropologie*, 91: 163-174. P; Mallegni, F., Ronchitelli, A.T. (1989), Deciduous teeth of the Neandertal mandible from Molare shelter, near Scario (Salerno, Italy). *American Journal of Physical Anthropology*, 79(4), 475-482. P; Ronchitelli, A., Mallegni, F. (1985), Preliminary notes about the Mousterian deposit of Riparo del Molare (Salerno) and the Neanderthalian mandible found on the site. *Archivio per l'Antropologia e la Etnologia*, 115: 230-233. A, P; Spagnolo, V., et al. (2020), Short and close in time: overlapped occupation from the layer 56 of the Molare Rock shelter (Southern Italy). *Archaeological and Anthropological Sciences*, 12, 1-35. A, Z

Code data collected by: Jean-Luc Voisin

1. **MONSEMPRON**, Las Pélénos
2. Rock Shelter, near the village of Montsemron-Libos, Lot-et-Garonne, France, 55 km West from Cahors, exact coordinates unknown.
3. J.-L. Combes 1863 (discovery); L. Coulonges 1950 (excavations), A Quintard 1974-2002 (excavations).
4. Cave deposits.
5. No
6. Level J.

7.1 Mousterian.
7.2 Mousterian, Quina type (?).
7.3 No
7.4 No
7.5 No
7.6 No
7.7 No

8.1 N/A
8.2 No

9.1 No
9.2 No
9.3 Based on lithic industries.

10. a, a', b, c, d, e, f, g, g', h, M8-95.1, M8-95.2, Grot1-Hom Rem1, Grot1-Hom Rem2.

10.1 –
10.2 M8-95.1: around 12 years old (unclosed apex of the roots).
10.3 a: parietal bone (ff); a': parietal bone (ff); Grot1-Hom Rem1: R parietal bone (f); M8-95.2: R parietal bone (ff); F: R parietal bone (ff); g: occipital bone (?) (ff); g': frontal bone (?) (ff); h: R maxillary bone (f) with I^2 to M^2; b: L mandible (f) with C_1, P_3 and P_4 (in Piveteau & Dechaseaux (1957), picture 510, the mandible had also I_2, M_1 and M_2).
10.4 c: LI^{1-2}; d: LM^2; e: tooth root (ff); M8-95.1: RM^2; Grot1-Hom Rem2: RC_1.
10.5 –

11. For M8-95.1, M8-95.2, Grot1-Hom Rem1 and Grot1-Hom Rem2: Laboratory UMR PACEA 5199 – Universite de Bordeaux, Bâtiment B2, Allée Geoffroy Saint-Hilaire CS 50023, 33615 Pessac Cedex, France.
12. –
13. –

14.1 No
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –

15. No
16. No
17. Coulonges L., et al. (1952), Le gisement préhistorique de Monsempron (Lot-et-Garonne). *Annales de Paléontologie* 38, 81-120. A, Str; Le Tensorer J.M. (1969), Le Moustérien de Las Pélénos (Lot-et-Garonne), étude statistique. *Bulletin de la Société Préhistorique française. Comptes rendus des séances mensuelles* 66 (8), 232-236. https://doi.org/10.3406/bspf.1969.10413. A; Scolan H., et al. (2012), Des nouveaux vestiges néanderthaliens à Las Pélénos (Monsempron-Libos, Lot-et-Garonne, France). *Bulletins et Mémoires de la Société d'Anthropologie de Paris* 24 (4-3), 69-95. https://doi.org/10.1007/s13219-011-0047-x. P, R; Piveteau J., Dechaseaux C. (1957), *Traité de paléontologie – Tome VII: primates, paléontologie humaine*. Masson, Paris, 675. P; Turq A. (2000), Le Moustérien de type Quina. *Paléo*, *supplément "Le paléolithique inférieur et moyen entre Dordogne et Lot"*. 310-343. https://doi.org/10.3406/pal.2000.1275. A
18. Human remains were found in the Upper Palaeolithic levels as well.

Code data collected by: Jean-Luc Voisin

1. **MONTGAUDIER**
2. Collapsed cave (several sections: Abri Lartet (or Locus 4), Abri Paignon, Abri Gaudry, Grand Porche and the Tardoire section), near the village of Montbron, Charente, France, 25 km East from Angoulême; 45°40'03" N, 0°28'11" E.
3. E. Lartet before 1850 (first excavations), numerous excavations were then carried out, more or less legally, until 1959. L. Duport began long-term modern excavations in 1966.
4. Cave deposits.
5. No
6. Grand Porche section, Mousterian unit, layer 3.

7.1 Mousterian (Lartet & Grand Porche).
7.2 Mousterian Charentian type (Abri Lartet), Mousterian Quina type (Tardoire section).
7.3 8 bone tools (Level 2, Abri Lartet).
7.4 No
7.5 No
7.6 Yes (ochre) (in Abri Lartet).
7.7 Man-made ground by Mousterian people (in Abri Lartet) with a fire place.
8.1 Large and small mammals.
8.2 No
9.1 No
9.2 C14, animal bones from layer 2, 48 000 ±4 000 to 34 950 ± 720 years (Tournepiche 1988).
9.3 No data.

10. Montgaudier mandible (Grand Porche).

10.1 Female (teeth size).
10.2 12 to 13 years old (M_2 wear and M_3 absence).
10.3 Montgaudier mandible: L mandible (ff) with I_2, C_1, M_1.
10.4 No free teeth.
10.5 –

11. Musée d'Angoulême, Square Girard II (rue Corneille), 16000 Angoulême, France.
12. –
13. –

14.1 No
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –

15. No
16. No

17. Baumann M. et al. (2022), Not so unusual Neanderthal bone tools: new examples from Abri Lartet, France. *Archaeological and Anthropological Sciences* 14 (10), 10. https://doi.org/10.1007/s12520-022-01674-4. A; Boukhir M. (1992), *Etude stratigraphique et sédimentologique du site Paléolithique de Montgaudier (Charente)*. PhD, Université de Bordeaux I, Bordeaux. Str, A; Boukhir M. et al. (2017), Etude sédimentologique et stratigraphique des dépôts des abris Gaudry et Lartet du gisement de Montgaudier, Charente, France. *European Scientific Journal* 13 (6), 249 (18). https://doi.org/10.19044/esj.2017.v13n6p249. Str; Boukhir M. et al. (2017), Etude sédimentologique et stratigraphique du remplissage du Grand Porche du gisement de Montgaudier, Charente, France. *European Scientific Journal* 13 (18), 402 (24). https://doi.org/10.19044/esj.2017.v13n18p402. Str; Boukhir M. et al. (2017), Etude sédimentologique et stratigraphique du remplissage du premier étage du gisement de Montgaudier, Charente, France. *European Scientific Journal* 13 (21), 183 (25). https://doi.org/10.19044/esj.2017.v13n21p183. Str; Debénath A., Duport L. (1971), Os travaillés et os utilisés de quelques gisements préhistoriques Charentais (Paléolithique ancien et moyen). *Bulletins et Mémoires de la Société d'Archéologie et d'Histoire de la Charente* 189-202. A; Debénath A., Duport L. (1986), Le Moustérien de la grotte de Montgaudier (Charente). *Bulletin de la Société d'Anthropologie du Sud-Ouest* 21 (1), 5-9. A; Debénath A., Duport L. (1987), La grotte de Montgaudier, commune de Montbron (Charente). Le Moustérien de Montgaudier (Charente). *Bulletins et Mémoires de la Société d'Archéologie et d'Histoire de la Charente* 2, 93-104. A; Mohammed B. et al. (2017), Etude sédimentologique et stratigraphique des dépôts des abris Gaudry et Lartet du gisement de Montgaudier, Charente, France. *European Scientific Journal* 13 (6), 249 (18). https://doi.org/10.19044/esj.2017.v13n6p249. Str; Debénath A. (1974), *Recherches sur les terrains quaternaires charentais et les industries qui leurs sont associées*. Ph.D. Université Bordeaux I, Bordeaux. A; Duport L. (1972), Découverte d'un sol aménagé (vraisemblablement un lieu cultuel) à l'abri E. Lartet, grotte de Montgaudier, commune de Montbron (Charente). *Comptes Rendus Hebdomadaires des Séances de l'Académie des Sciences, Série D, Sciences Naturelles* 274 (2), 818-821. A; Duport L. (1973 – 1974), Découverte d'une portion de mandibule de néanderthalien dans le gisement de Montgaudier. *Bulletins et Mémoires de la Société d'Archéologie et d'Histoire de la Charente* 33-36. P; Duport L., Vandermeersch B. (1976), La mandibule moustérienne de Montgaudier (Montbron, Charente). *Comptes Rendus Hebdomadaires des Séances de l'Académie des Sciences, Série D, Sciences Naturelles* 283 (1), 1161-1164. P, R; Mann A., Vandermeersch B. (1997), An adolescent female Neanderthal mandible from Montgaudier Cave, Charente, France. *American Journal of Physical Anthropology*, 103 (4) 507-527. https://doi-org.inee.bib.cnrs.fr/10.1002/(SICI)1096-8644(199708)103:4<507::AID-AJPA8>3.0.CO;2-J. P, R; Ready E., Morin E. (2019), Preliminary analysis of faunal remains from three Middle Paleolithic deposits in Charente, France. *Journal of Archaeological Science: Reports* 24, 290-301. https://doi.org/10.1016/j.jasrep.2019.01.020. A, Z; Tournepiche J.F. (1985), Biochronologie des faunes antéwürmiennes de Charente. *Bulletin de la Société d'Anthropologie du Sud-Ouest* 20, 131-143. D, Z; Vandermeersch B. (1976), Poitou-Charentes. *Gallia préhistoire*, 19 (2), 433-434. www.persee.fr/doc/galip_0016-4127_1976_num_19_2_1537. A, Str.

Code data collected by: Jean-Luc Voisin

1. **MONTMAURIN – COUPE-GORGE**, Coupe-Gorge
2. Cave close to the village of Montmaurin, Haute-Garonne, France, 19 km North of Saint Gaudens; 43°13'47" N, 0°37'58" E.
3. L. Méroc during the 1940s.
4. Cave deposits.
5. No
6. Montmaurin CG4 in layer 3Z; Montmaurin CG5 in layers 3T (the maxilla) and 3T/S (the canine); Montmaurin CG 1, CG 2 and CG 3 in layer 3T (but deeper than the maxilla).

7.1 Acheulean and Mousterian.
7.2 Acheulean discoid and mousterian.
7.3 No
7.4 No
7.5 No
7.6 No
7.7 No
8.1 Large and small mammals, birds.
8.2 No
9.1 No
9.2 No
9.3 The dating of the Coupe-Gorge cave is based on geomorphology, biochronology, palynology and the study of lithic industries; Montmaurin CG 1, CG2 and CG 3: MIS 7a; Montmaurin CG5: MIS 7a; Montmaurin CG4: MIS 6.

10. Montmaurin CG 1 (or C.G. 2 F 3 or Montmaurin 2); Montmaurin CG 2 (or C.B. B 3 or Montmaurin 2); Montmaurin CG 3 (or C.G. 2 D 3 n° 2.671 or Montmaurin 2); Montmaurin CG 4 (or Montmaurin 3 or G. 3 Z 6281); Montmaurin CG 5 (or Montmaurin 4 or C. G. 14 B 3 S n°14188 and C.G. 10 B 3 T n° 10.314).

10.1 –
10.2 Montmaurin CG 4 (Montmaurin 3 or G. 3 Z 6281): 4 or 5 years (degree of calcification of the two I_1s and the absence of any filling of the temporary alveoli of the two dI_2s).
10.3 Montmaurin CG 4 (Montmaurin 3 or G. 3 Z 6281): juvenile mandible (ff) (mandibular symphysis); Montmaurin CG 5 (Montmaurin 4 or C. G. 14 B 3 S n°14188 and C.G. 10 B 3 T n° 10.314): adult maxilla (ff) (C. G. 14 B 3 S n°14188) with C' (C.G. 10 B 3 T n° 10.314) RP^3 and RP^4. The C' (C.G. 10 B 3 T n° 10.314) has not been found in the maxilla.
10.4 Montmaurin CG 1 (C.G. 2 F 3 or Montmaurin 2): LC'; Montmaurin CG 2 (C.B. B 3 or Montmaurin 2): LP^4 (ff); Montmaurin CG 3 (C.G. 2 D 3 n° 2.671 or Montmaurin 2): RM_3.
10.5 –

11. Institut de Paléontologie Humaine, 1 rue René Panhard, 75013 Paris, France.
12. –
13. –

14.1 No
14.2 –
14.3 –

14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –

15. No
16. No
17. Billy G. (1982), Les dents humaines de la grotte du Coupe-Gorge à Montmaurin. *Bulletins et Mémoires de la Société d'Anthropologie de Paris*, Série 13 Tome 9 (3), 211-225. https://doi.org/10.3406/bmsap.1982.9761. P, R; Billy G. (1985), Les restes humains de la grotte du Coupe-Gorge à Montmaurin (Haute-Garonne). *Zeitschrift für Morphologie und Anthropologie* 75 (2), 223-237. https://www.jstor.org/stable/25757140. P, R; Crégut-Bonnoure E., et al. (2010), Le contexte géomorphologique et faunique de l'homme de Montmaurin (Haute-Garonne). *Préhistoires Méditerranéennes* 1, 35-85. https://doi.org/10.4000/pm.543. A, Z; Gaillard C. (1981), Les outils de l'industrie lithique du Paléolithique inférieur et moyen de la grotte de Coupe-Gorge à Montmaurin (Haute Garonne). *Bulletin du du Musée d'Anthropologie Préhistorique de Monaco* 25, 34-53. A, Str; Gaillard C. (1982), L'industrie lithique du Paléolithique inférieur et moyen de la grotte de Coupe-Gorge à Montmaurin (Haute Garonne). *Gallia Préhistoire* 25 (1), 79-105. A, Str; Girard M., Renault-Miskovsky J. (1979), Analyse pollinique de la grotte de Coupe-Gorge à Montmaurin (Haute-Garonne). *Bulletin de l'Association Française pour l'Etude du Quaternaire* 16 (4), 175-189. https://doi.org/10.3406/quate.1979.2090. D, E; Girard M., Renault-Miskovsky J. (1983), Datation et paléoenvironnement de la mandibule de Montmaurin (Montmaurin, Haute-Garonne); analyses polliniques dans la Niche. *Comptes Rendus de l'Académie des Sciences de Paris Série 2,* 296 (1), 669-671. D, E; Granat J., Peyre E. (2012), Les fossiles humains (125 – 200 ka) de la grotte du Coupe-Gorge-Montmaurin (Haute-Garonne-France), nouvelle interprétation. Emergence de la parole. *Biométrie Humaine et Anthropologie*, 29 (3-4), 89-105. P, A, R; Guadelli J.-L. (1990), Quelques données sur la faune de Coupe-Gorge, Montmaurin (Haute-Garonne, France). *Paléo* 2, 107-126. https://doi.org/10.3406/pal.1990.991. Z; Thiam D. (2021), Les sites acheuléens des grottes la Terrasse et du Coupe-Gorge, à Montmaurin, Haute Garonne, France. *L'Anthropologie (Paris)* 125 (1), 102835 (28 p.) https://doi.org/10.1016/j.anthro.2021.102835. A
18. Name Montmaurin should be avoided on its own, as there is another Neanderthal site close by (Montmaurin-La Niche). The three remains grouped together under the name Montmaurin 2 probably do not belong to the same individual; Montmaurin 2 should therefore be avoided.

Code data collected by: Jean-Luc Voisin

1. **MONTMAURIN-LA NICHE**, La Niche
2. Cave close to the village of Montmaurin, Haute-Garonne, France, 19 km North of Saint Gaudens; 43°13'47" N, 0°37'58" E.
3. R. Cammas, 18th June 1945.
4. The infilling has been alternatively a carnivore den and hibernation place for bear and briefly occupied by humans.
5. No
6. Layer C3.
7.1 Late Acheulean.
7.2 Other.
7.3 No
7.4 No
7.5 No
7.6 No
7.7 No
8.1 Large mammals.
8.2 No
9.1 No
9.2 No
9.3 Biostratigraphy from large mammals: MIS7 for the whole level C.
10. Montmaurin LN 1 (also known as Montmaurin 1, but no longer in use); Montmaurin LN2; Montmaurin LN3. MNI: 1.
10.1 –
10.2 Montmaurin LN2: around 20 years old (fusion of the vertebra).
10.3 Montmaurin LN 1: mandible (d) with R & L M_1, M_2 and M_3; Montmaurin LN2: thoriacic vertebra 12 (d); Montmaurin LN3: L tibia (f).
10.4 –
10.5 –
11. Montmaurin LN 1: Musée de l'Homme, 17 Place du Trocadéro, 75016, Paris, France; Montmaurin LN2 & LN3: Institut de Paléontologie Humaine, 1 rue René Panhard, 75013, Paris, France.
12. –
13. µCT Scan: Université de Bordeaux, UMR 5199, Pessac, France and Institut de Paléontologie Humaine, 1 rue René Panhard, 75013 Paris, France.
14.1 No
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –

15. No
16. No
17. Baylac P. et al. (1950), Découvertes récentes dans les grottes de Montmaurin (Haute-Garonne). *L'Anthropologie (Paris)* 54, 262-271. P; Billy G., Vallois H.V. (1977), La mandibule pré-rissienne de Montmaurin *L'Anthropologie (Paris)* 81, 273-312 P; Billy G., Vallois H.V. (1977), La mandibule pré-rissienne de Montmaurin (suite). *L'Anthropologie (Paris)* 81, 411-458. P; Cammas R., Tavoso A. (1986), Nouveaux restes humains issus du remplissage de la Niche (Montmaurin, Haute-Garonne). *Comptes Rendus de l'Académie des Sciences de Paris Série 2* 302 (8), 609-614. P; Crégut-Bonnoure E. et al. (2010), Le contexte géomorphologique et faunique de l'homme de Montmaurin (Haute-Garonne). *Préhistoires Méditerranéennes* 1, 35-85. https://doi.org/10.4000/pm.543. A, Z; Girard M., Renault-Miskovsky J. (1983), Datation et paléoenvironnement de la mandibule de Montmaurin (Montmaurin, Haute-Garonne); analyses polliniques dans la Niche. *Comptes Rendus de l'Académie des Sciences de Paris Série 2* 296 (1), 669-671. D, E; Martined de Pinillos, M. et al. Martínez de Pinillos et al. (2020), Inner morphological and metric characterization of the molar remains from the Montmaurin-La Niche mandible: The Neanderthal signal, *Journal of Human Evolution* 145, 102739 (19) https://doi.org/10.1016/j.jhevol.2019.102739. P; Méroc L. (1963), Les éléments de datation de la mandibule humaine de Montmaurin (Haute-Garonne). *Bulletin de la Société Géologique de France* 7, 508-515. D; Vallois H.V. (1955), La mandibule humaine pré-moustérienne de Montmaurin. *Comptes Rendus Hebdomadaires des séances de l'Académie des Sciences, Paris* 240 (14), 1577-1579. P; Vallois H.V. (1956), The premousterian human mandible from Montmaurin. *American Journal of Physical Anthropology* 14 (2), 319-32. P; Vialet A. et al. (2018), A reassessment of the Montmaurin-La Niche mandible (Haute Garonne, France) in the context of European Pleistocene human evolution. *PLoS ONE* 13(1): e0189714 (7). https://doi.org/10.1371/journal.pone.0189714. P, R
18. The name Montmaurin should be avoided on its own, as there is another Neandertal site close by (Montmaurin-Coupe-Gorge).

Code data collected by: Jean-Luc Voisin

1. **MOULA-GUERCY**, Baume de Moula Guercy
2. Rock shelter lying on a calcareous cliff above the west bank of the Rhone River, close to the village of Soyons (Ardèche), 10 km South of Valence (Drôme), France; 44°52'58" N, 4°50'51" E.
3. The cave was dicovered, around 1870, by Mr Lepic. It was rediscovered by Mr Moula (1970 or 1972) while hunting and made the first official excavations. Most works was made by Mr. A. Defleur (in the 90's).
4. Cave deposit.
5. No
6. Level XV.
7.1 Mousterian, artefacts are in each level, except the level VI, but more than 90% come from levels IV, VIII, XIV and XV.
7.2 Levallois and discoid technology.
7.3 No
7.4 No
7.5 No
7.6 No
7.7 Charcoal in layer XV.
8.1 Large and small mammals.
8.2 No
9.1 Neandertal tooth (3524), layer XV, U- series, 91.8 ± 0.9 ka; Neandertal tooth (3525), layer XV, U-series, unreliable results but MIS 5 (Willmes et al. 2016).
9.2 U-series and ESR dating carried out on 14 faunal teeth: 120 – 130 ka. (extensive details and results in Willems et al. 2016).
9.3 Biostratigraphy (faunal composition) MIS 5.
10. S-41; S-61; D1-74; D2-530; D2-550; D2-626; D2-775; E1-21; E2-244; E4-221; G1-98; G1-117; G1-160; G2-69; G2-435; G2-463; I1-6; I1-12; I2-13; I2-14; I2-135; I2-136; K3-CSN2; S-9; S-1; S-39; S-61; S-66; S-CNN4; I4-55; G2-419; S-TNN1; F4-77; G2-419; D1-230; L4-TNN5; G3-251; J5-TNN4; *-TNN2; G4-144; S-TNN1+S-TNN1; I4-55; F3-215; G2-117; H3-73; I4; TNN3; D2-588; D1-259; S-27; F1-461; G2-648; D3-768; E1-123; D4-48;D1-160; G1-154; K0-HNN1; H1-21; F1-359; I2-104; E1-236; D2-566; E1-206; D2-582; E1-222; G2-464; M-S-18; I2-8; E5-25; D2-587; G1-147; K2/3-FNN3; D3-760; D2-603; J1-7; G1-146; S-6; K3-AxNN2; D3-689; D2-586; J1-40; F1-318; G5-33; J6-5; S-34; F2-332; C2-73; F1-421; E1-196; G1-163; G3-288; F1-345; E1-204; G1-150; D2-539+F1-409+G1-167 (set M-CS02); H2-62; D2-584; D2-556; F1-351; D2-616b; E1-100; D2-473; C3-39; G1-148; G3-18; D3-743; D2-516; E5-29; C1-LNN1; I2-68; D1-233. MNI: 4 to 6 individuals
10.1 Guercy 1: male (robustness of the bones). Guercy 2: female (robustness of the bones).
10.2 S-41: immature (degree of sutural development, vault and suprastructure thickening, and development of muscular markings); S-61: immature (degree of sutural development, vault and suprastructure thickening, and development of muscular markings); D4-48:14-16 years old (smooth, thin, and lightweight cortical bone on the dorsal shaft); D1-160: 14-16 years old (size and the thin, lightweight cortical bone); J1-7: immature (overall size and the absence of articular surface fusion); D2-586: immature

(small overall size and the absence of epiphyseal fusion); G3-288: immature (lack of fused articular epiphyses); H2-62: immature (small shaft diameter and a poorly woven cortical bone); D2-584: immature; D2-556: immature (poorly woven cortical bone), E1-100: immature (small shaft diameter).

10.3 Guercy 1: D1-74 frontal (f), G1-98 L parietal (ff), G1-117 R parietal (ff), G2-69 L parietal (ff), G2-435 R parietal (ff), G2-463 Frontal, R and L parietals (ff), I2-135 L parietal (ff), I2-136 L parietal (ff), S-9 L parietal (ff), S-16: L parietal (ff), S-39: R parietal (ff), E2-244 occipital (ff), G1-146: L 2nd rib (ff). J1-40: R clavicle (ff), S-34: R radius (ff), F2-332: L radius (ff), G1-163: Ros coxae (ff), D2-539: L femur (ff), specimens that form a conjoint set, M-CS02, F1-409: L femur (ff), specimens that form a conjoint set, M-CS02, G1-167: L femur (ff), specimens that form a conjoint set, M-CS02. Guercy 2: D2-530 parietal (ff), D2-626 frontal (ff), F1-318: L clavicle (ff), F1-345: L ilium (f), D2-616b: L tibia (ff). Guercy 3: S-41: occipital fragment, S-61: occipital fragment, J1-7: axis (ff), D2-586: R clavicle (f), G3-288: L ischium (f), H2-62: R femur (ff), D2-556: R tibia (ff). Guercy 4: D2-550 frontal (ff), E1-21 L temporal (ff), D2-775 R parietal (ff), E4-221 parietal (ff), G1-160 frontal (ff), E1-100: L fibula (ff). No attribution to an individual: I1-6 L parietal (ff), I1-12 L parietal, frontal, alisphenoid, temporal (ff), I2-13 frontal (ff), I2-14 L parietal (ff), K3-CSN2: L temporal (ff), S-41: R occipital (ff), S-61: occipital (ff), S-66: L parietal (ff), S-CNN4: parietal (ff), I4-55: R maxilla with dM^2-M^1 (ff), G2-419: R mandible with M_1-M_3 (ff), S-TNN1 R mandible with C (f), F4-77 R mandible (f ?), F1-461: L capitates (i),G2-648: L 2nd metacarpal (i), D3-768: L 3rd metacarpal (f), E1-123: L proximal hand phalanx (f), D4-48: Proximal hand phalanx (f), D1-160: proximal hand phalanx (ff), G1-154: intermediate hand phalanx (i), K0-HNN1: distal hand phalanx (i), H1-21: distal hand phalanx (i), F1-359: distal hand phalanx (f), I2-104: L pollical proximal phalanx (i), E1-236: talus (ff), D2-566: R talus (ff), E1-206: R calcaneus (ff), D2-582: R calcaneus (ff), E1-222: R cuboid (i), G2-464: R navicular (i), M-S-18: L navicular (i), I2-8: L medial cuneiform (i), E5-25: 1st metatarsal (ff) (may not be human), D2-587: 2nd L metatarsal (i), G1-147: 3rd R metatarsal (f), K2/3-FNN3: proximal foot phalanx (i), D3-760: intermediate foot phalanx (f), D2-603: distal foot phalanx (i), S-6: L 2nd rib (ff), K3-AxNN2: Rib (ff) (may not be human), D3-689: Rib (ff) (may not be human),G5-33: L scapula (ff), J6-5: L humerus (ff), C2-73: R radius (ff), F1-421: L ulna (ff), E1-196: L ulna (ff), E1-204: iliac crest, G1-150: os coxae (ff), D2-584: femur (ff), F1-351: tibia (ff); May not be human: D2-473: humerus (ff), C3-39: humerus (ff), G1-148: humerus, femur or tibia shaft (ff). G3-18: humerus, femur or tibia shaft (ff), D3-743: Femur (ff), D2-516: femur (ff), E5-29: femur (ff), C1-LNN1: tibia (ff), I2-68: femur or tibia fragment, D1-233: tibia (ff).

10.4 G2-419: RM_1, G2-419: RM_2, G2-419: RM_3, D1-230: RM_1, L4-TNN5: LM_1, G3-251: RdM_2 J5-TNN4: LdM_2, *-TNN2: LC_1, G4-144: LC_1, S-TNN1: RC_1, I4-55: RdM_2, I4-55: RM^1, F3-215: RM^2, G2-117: RM^2, H3-73: RdM^1, I4-TNN3: RC^1, D2-588: LI^1, D1-259: RI^2, S-27: LP^3.

10.5 I2-104 (left pollical proximal phalanx): osteoarthritis.
11. Site archéologique: Grottes et Musée, 28 Rue de l'Église, 07130 Soyons, France.
12. –
13. CT scan at the Hospital of la Timone, Marseille, France.
14.1 No
14.2 –

14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No
17. Condemi S. et al. (2023), A pathological Neandertal thumb phalanx from Moula-Guercy (France). *International Journal of Paleopathology* 42, 14-17. https://doi.org/10.1016/j.ijpp.2023.06.002. P; Defleur A. (1995), Nouvelles découvertes de restes humains Moustériens dans les dépôts de la Baume Moula-Guercy (Soyons, Ardèche). *Bulletins et Mémoires de la Société d'Anthropologie de Paris* 7 (3-4), 185-190. https://doi.org/10.3406/bmsap.1995.2419. P, R; Defleur A. (2015), Les industries lithiques moustériennes de la Baume Moula-Guercy (Soyons, Ardèche). Fouilles 1993 – 1999. *L'Anthropologie (Paris)* 119 (2), 170-253. https://doi.org/10.1016/j.anthro.2015.04.002 A; Defleur A., et al. (1993), Cannibals among the Neanderthals. *Nature*, 362 (6417), 214. https://doi.org/10.1038/362214a0 P; Hlusko L.J., et al. (2013), Neanderthal teeth from Moula-Guercy, Ardèche, France. *American Journal of Physical Anthropology* 151 (3), 477-491. https://doi.org/10.1002/ajpa.22291 P, R; Lepic. (1876) Sur la caverne de Néron. *Bulletins de la Société d'anthropologie de Paris*, Série II, Tome 11, 18-19. https://doi.org/10.3406/bmsap.1876.9573 A; Mersey B., et al. (2013a), Neanderthal hand and foot remains from Moula-Guercy, Ardèche, France. *American Journal of Physical Anthropology* 152 (4), 516–529. https://doi.org/10.1002/ajpa.22389 P, R; Mersey B., et al. (2013b), Neanderthal axial and appendicular remains from Moula-Guercy, Ardèche, France. *American Journal of Physical Anthropology* 152 (4), 530–542. https://doi.org/10.1002/ajpa.22388 P, R; et al. (2021), Neanderthal cranial remains from Baume Moula-Guercy (Soyons, Ardèche, France). *American Journal of Physical Anthropology* 175 (1): 201-226. https://doi.org/10.1002/ajpa.24256 P, R; Richards G.D. et al. (2022), Neanderthal child's occipital from Baume Moula-Guercy (Soyons, Ardèche, France). *American Journal of Biological Anthropology* 178 (1), 69-88. https://doi-org.inee.bib.cnrs.fr/10.1002/ajpa.24489 P, R; Voisin J.-L., et al. (In press), A new thumb phalanx from Moula Guercy (France): description and considerations of Neandertal hand use. *Comptes Rendus Palevol.* P, R; Willmes, M. et al. (2016), A comprehensive chronology of the Neanderthal site Moula-Guercy, Ardèche, France. *Journal of Archaeological Science, Reports* 9, 309-319. https://doi.org/10.1016/j.jasrep.2016.08.003 D
18. Baume means cave in dialect. The F4-77 Right mandible has not yet been studied contrary to Richards et al (2021) statement.

Code data collected by: Jean-Luc Voisin

1. **MOULIN DU MILIEU**
2. Close to the village of Gavaudin, Dordogne, France. 51 km SE from Bergerac; coordinates N/A.
3. Turq early 1980s (excavations), but see remarks.
4. Cave deposit.
5. No
6. Levels 4-7.
7.1 Not studied (could be Quina-type Mousterian, rich).
7.2 Not studied.
7.3 No
7.4 No
7.5 No
7.6 No
7.7 No
8.1 Not studied (but rich).
8.2 No
9.1 No
9.2 No
9.3 Stratigraphy, based on color and rock structures.
10. 6 remains with no catalogue numbers; MNI: 3.
10.1 –
10.2 –
10.3 Calvaria (ff); two mandibles (both ff), one with 1 tooth and the other with 2 teeth.
10.4 3 teeth (no more information).
10.5 –
11. Unsure.
12. –
13. –
14.1 No
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No

17. Turq A. (1980), Gavaudin – Moulin du Milieu. *Gallia Préhistoire*, 23 (2), 422. A; Turq A. (1982), Gavaudin – Moulin du Milieu. *Gallia Préhistoire*, 25 (2), 420-421. A Str; Turq A. (1990), Observations sur l'organisation spatiale au sein des habitats moustériens entre Dordogne et Lot. *Bulletin de la Société Préhistorique Française*, 87 (10-12), 314-316. https://doi.org/10.3406/bspf.1990.9914. A

18. The site was known since the middle of the 19th century. Numerous people have excavated the cave and all material has been lost (appears to be rich in lithic industries and human remains) and only few lines still exist according to Turq (1980). Again, according to Turq, some artefacts could be in Canada and/or the USA today. Human remains were given to Jean-Louis Heim for study but no publication seems to exist.

Code data collected by: Carolin Röding

1. **OCHTENDUNG**, Ochtendung Wannenköpfle; Ochtendung Wannenkoepfle; Ochtendung Wannenkopfle.
2. Rheinlandpfalz, Germany; 50°21'57" N, 7°24'40" E.
3. A. von Berg in March 1997.
4. Other (volcanic deposits).
5. No
6. Human remains from the bottom of the "Vulkan-klastische Schuttdecke".

7.1 Mousterian but only 3 lithic artefacts.
7.2 N/A
7.3 No
7.4 No
7.5 No
7.6 No
7.7 No

8.1 No
8.2 No

9.1 AAR (amino-acid racemization) date of the neurocranium, around 160-170 ka (Flohr et al. 2004a, but uncertain).
9.2 R-TL, unit: Vulkan-klastische Schuttdecke, sample BT1137 (clay): 178 ± 18 ka, sample BT1138 (quartzite sandstone): 176± 21 ka
MAR-TL, unit Vulkan-klastische Schuttdecke, sample BT1137 (clay): 187 ± 29 ka; Ar/Ar, unit Vulkan-klastische Schuttdecke, sample #6412 (Phlogopite mineral): 191 ± 12 ka (Richter et al. 2017 for all).
9.3 MIS 6 based on Tephra and Lacher See pumice sequence.

10. Ochtendung 1.

10.1 Ochtendung 1: male (based on size and bone thickness; rather unreliable).
10.2 Ochtendung 1: adult (cranial vault thickness).
10.3 Ochtendung 1: cranium (ff): 3 fragments: frontal bone, R and L parietal bones.
10.4 –
10.5 –

11. Human remains: Landesamt für Denkmalpflege, Abteilung Archäologische Denkmalpflege, Koblenz, Germany (unsure).
12. –
13. –

14.1 No
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –

15. No

16. No

17. von Berg, A., et al. (2000), Die Schädelkalotte des Neanderthalers von Ochtendung/ Osteifel-Archäologie, *Paläoanthropologie und Geologie. Eiszeitalter und Gegenwart* 50, 56-68. A, E, R; Richter, D., et al. (2017), New chronometric age estimates for the context of the Neanderthal from Wannen-Ochtendung (Germany) by TL and argon dating. *Journal of Archaeological Science: Reports* 14, 127-136. D; Condemi, S. (1997), Preliminary study of the calotte of the Ochtendung cranium. – *Berichte zur Archäologie an Mittelrhein und Mosel*, 5: 23-28. P; Koblenz. P; von Berg, A. (1997a), Die Schädelkalotte eines Neanderthalers aus dem Wannenvulkan bei Ochtendung, Kreis Mayen-Koblenz. *Berichte zur Archäologie an Mittelrhein und Mosel*, 5: 11-28; Koblenz. P; von Berg, A. (1997b), Ein Hominidenrest aus dem Wannenvulkan bei Ochtendung, Kreis Mayen-Koblenz. Ein Vorbericht. *Archäologisches Korrespondenzblatt*, 27: 531-538; Mainz. P; Flohr, S., et al. (2004a), Der älteste Rheinländer. Analyse einer Neanderthaler-Schädeldecke aus Rheinland-Pfalz. *Natur und Museum* 134 (5), 133e141. D; Flohr, S., et al. (2004b), Morphological analysis of the Neanderthal calotte from Ochtendung, Germany. *Human Evol*ution 19, 1-18. P

Code data collected by: Jean-Luc Voisin

1. **PAYRE**, Les grottes de Payre, Payre I & II (part of the same cave)

2. Rock shelter, formed from a collapsed cave at the end of the MIS 6, between the villages of Rompon and Pouzin, Ardèche, France, about 30 km south of Valence; 44°43'.53.43" N, 4°44'16.14" E.

3. Payre II & I known since the 50s, M.-H. Moncel and M. Patou-Mathis between 1993 and 2002 (excavations).

4. Cave deposits.

5. No

6. Payre 1: unit D; Payre 29: Unit E; Payre 482, 336, 717: Unit F; Payre 15, 127, 254, 344, 633, 654: Unit G (layer Ga); Payre 6, 237, 250, 335: Unit G (layer Gb).

7.1 Mousterian over the whole stratigraphy.

7.2 Discoid.

7.3 Burned bones, bone used as fuel for fire.

7.4 No

7.5 Shell (no modifications).

7.6 No

7.7 No clear-cut fireplaces, just a few piles of ashes (fireplace emptying?).

8.1 Large and small mammals, birds, mollusc.

8.2 No

9.1 Payre 1, U-Th, 200,000 years old (Grün et al., 2008).

9.2 TL, unit F between 213 000-242 000 years old, unit G between 161 000-279 000 years old; U-Th and ESR, layer H between 280 000-229 000 years old (Masaoudi H. et al., 1997).

9.3 Relative dating is based on fauna, lithic industries and stratigraphy. Unit G and F correspond to MIS 6 and Unit D corresponds to MIS 5.

10. Individual 1 (Payre 482 & Payre 717), Individual 2 (Payre 127, Payre 254, Payre 344, Payre 335, Payre 633), Individual 3 (Payre 6, Payre 237, Payre 250), and 5 remains with no individual attribution (Payre 1, Payre 15, Payre 29, Payre 336, Payre 654). MNI: 8.

10.1 –

10.2 Individual 2, Payre 335: possibly juvenile (the opening of the lambdoid suture and the thinness of the parietal fragment); Individual 3: the three teeth correspond to a 7/8-year-old (but no data); Payre 1: 3 years, (formation of the crown); Payre 29: 15-17 years old (tooth wear); Payre 336: young adult (tooth wear).

10.3 Individual 2- Payre 335: parietal bone (ff); Payre 15: mandible R with P_4, M_1, M_2 (f).

10.4 Individual 1: Payre 482: RC', Payre 717: RP^3; Individual 2: Payre 127: LP_4 (f), Payre 254: RP_3, Payre 344: LP_3, Payre 633: RC_1; Individual 3: Payre 6: LM_{1-2}, Payre 237: RI_2, Payre 250: RI_1; Payre 1: RM_1; Payre 29: LP_4 (f); Payre 336: RM_1; Payre 654: LM^2.

10.5 Payre 654: possible bruxism ; Payre 6: lead contamination; Payre 336: lead contamination.

11. Temporarily at the Institute de Paléontologie Humaine, 1 rue René Panhard, 75013 Paris (M.H. Moncel) and then at Cité de la Préhistoire, Grand site d'Orgnac, Place Robert de Joly, 07150 Orgnac l'Aven, France.

12. –

13. –

14.1 No
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. $^{13}C/^{12}C$, $^{18}O/^{16}O$, Sr/Ca (Aubert et al. 2012; Bocherens et al. 2016 et al. 2016; Ecker et al. 2013; Smith et al. 2018).
16. No
17. Aubert M. et al. (2012), In situ oxygen isotope micro-analysis of faunal material and human teeth using a SHRIMP II: a new tool for palaeo-ecology and archaeology. *Journal of Archaeological Science* 39 (10), 3184-3194. https://doi.org/10.1016/j.jas.2012.05.002. S; Bocherens, H. et al. (2016), Direct isotopic evidence for subsistence variability in Middle Pleistocene Neanderthals (Payre, southeastern France). *Quaternary Science Reviews* 154, 226-236. https://doi.org/10.1016/j.quascirev.2016.11.004. S; Ecker M. et al. (2013), Middle Pleistocene ecology and Neanderthal subsistence: insights from stable isotope analyses in Payre (Ardèche, southeastern France). *Journal of Human Evolution* 65 (4), 363-373. https://doi.org/10.1016/j.jhevol.2013.06.013. S, E, D; Grün R. et al. (2008), High resolution analysis of uranium and thorium concentration as well as U-series isotope distributions in a Neanderthal tooth from Payre (Ardèche, France) using laser ablation ICP-MS. *Geochimica et Cosmochimica Acta*,72 (21), 5278-5290. https://doi.org/10.1016/j.gca.2008.08.007. D; Hardy B.L., Moncel M.H. (2011), Neanderthal use of fish, mammals, birds, starchy plants and wood 125-250,000 years ago. *PLoS ONE* 6 (8), e23768 (10p.). https://doi.org/10.1371/journal.pone.0023768. A, E; Masaoudi H. et al. (1997), Datation du site Paléolithique moyen de Payre (Ardèche): nouvelles données radiométriques (méthodes U/Th et ESR). *Comptes Rendus de l'Académie des Sciences* 324, 149-156. D; Moncel M.H. (Eds.) (2008), Le site de Payre – Occupations humaines dans la vallée du Rhône à la fin du Pléistocène moyen et au début du Pléistocène supérieur. *Mémoire de la Société Préhistorique Française* 46, 336. P, A, Z, D, E; Moncel M.H. (1993), Le site de Payre (Commune de Rompon, Ardèche): Un site paléolithique moyen ancien dans un contexte d'abri effondré . *Quaternaire* 4 (4), 159-173. https://doi.org/10.3406/quate.1993.2006. A, Z; Moncel M. H., Condemi S. (1996), Découverte de dents humaines dans le site Paléolithique moyen de Payre (Ardèche, France). *Comptes Rendus de l'Académie des Sciences – Series IIA – Earth and Planetary Sciences* 322 (3), 251-257. P; Moncel M. H. Condemi S. (1997), Des restes humains dans le site paléolithique moyen ancien de Payre (Ardèche): dents et pariétal. *Bulletin de la Société Préhistorique Française*, 94 (2), 168-171. https://doi.org/10.3406/bspf.1997.10874. A, P, R; Moncel M.H. et al. (2002), Le cadre de vie des hommes du Paléolithique moyen (stades isotopiques 6 et 5) dans le site de Payre (Rompon, Ardèche): d'une grotte à un abri sous roche effondré. *Bulletin de la Société Préhistorique Française*, 99 (2) 249-273.

https://doi.org/10.3406/bspf.2002.12656. D, E; Rivals et al. (2009), Seasonality and intra-site variation of Neanderthal occupations in the Middle Palaeolithic locality of Payre (Ardèche, France) using dental wear analyses, *Journal of Archaeological Science* 36 (4), 1070-1078. https://doi.org/10.1016/j.jas.2008.12.009. E, Z; Smith T.M. et al. (2018), Wintertime stress, nursing, and lead exposure in Neanderthal children. *Science Advances* 4, eaau9483 (9). https://doi.org/10.1126/sciadv.aau948. P, S, D; Verna C. et al. (2020), The Middle Pleistocene hominin mandible from Payre (Ardèche, France). *Journal of Human Evolution* 144, 102775 (15). https://doi.org/10.1016/j.jhevol.2020.102775. P, R

Code data collected by: Jean-Luc Voisin

1. **PECH DE L'AZÉ I**

2. Cave, near the village of Carsac, 5 km South of Sarlat (Dordogne), France; 44°51'25" N, 1°16'34" E.

3. F. de Jouannet 1816 (discovery), L. Capitan did some excavations, following by L. Capitan and D. Peyrony who discovered the skull of a child in 1909. F. Bordes excavated the site the most. E. Patte wrote the first monograph in 1957. A tooth was discovered in 2004 from material excavated by Bordes.

4. Cave deposits.

5. No

6. Layer 6 (Pech-de-l'Azé I).

7.1 Mousterian of Acheulian Tradition type A & B.

7.2 Bifacial technology and flake.

7.3 No

7.4 No

7.5 No

7.6 Yes

7.7 Yes – Layer 4.

8.1 Large mammals and birds.

8.2 No

9.1 No

9.2 Tooth (wild ass), ESR, layer 6 (Soressi et al. 2007a, Table 1, Table 5); Bone (animal), ^{14}C, layer 6, samples GrA-25632 and GrA-25633 (Soressi et al. 2007a, Table 6). Between 51 000 and 41 000 years old.

9.3 Middle Palaeolithic based on lithic techno-typology.

10. Pech de l'Azé I; a molar without catalogue number (location H15-6, niveau II-4 deb).

10.1 –

10.2 Pech de l'Azé I: 2 – 3 years old (teeth eruption, cranial sutures, dimensions of the skull); no number (location H15-6, niveau II-4 deb): 9 to 14 years old, based on roots resorption.

10.3 Pech de l'Azé I: Child cranium (d), with L and RdI^1, L and RdC', RdM^1, RM^1 (germ) and RdM^2, R mandible (d) with dI_1, dI_2, dC_1, dM_1, M_1 (germ), dM_2.

10.4 Specimen without number (location H15-6, niveau II-4 deb): decidual molar with no roots due to natural resorption.

10.5 –

11. Musée de l'Homme, 17 Place du Trocadéro, 75016, Paris, France.

12. –

13. –

14.1 No

14.2 –

14.3 –

14.4 –

14.5 –

14.6 –

14.7 –

14.8 –

14.9 –

14.10 –

15. No

16. No

17. Bordes F. (1954), Les gisements du Pech de l' Azé (Dordogne). I – Le Moustérien de tradition acheuléenne. *L'Anthropologie* 58, 401-432 A, Str; Bordes F. (1955), Les gisements du Pech de l' Azé (Dordogne): le Moustérien de tradition acheuléene (suite), avec une note paléontologique de J. Bouchud. *L'Anthropologie* 59, 1-38. A; Capitan L., Peyrony D. (1909), Deux squelettes humains au milieu de foyers de l'époque moustérienne. *Comptes rendus des séances de l'Académie des Inscriptions et Belles-Lettres*, 53 (11), 797-806. doi: https://doi.org/10.3406/crai.1909.72388 A; Fenart R. (1969), Le crane de l'enfant du Pech-de-l'Azé, étudié dans les axes vestibulaires d'orientation. *Comptes Rendus de l'Académie des Sciences de Paris, Série D. – Sciences naturelles* 268, 2042-2045. P; Ferembach D. (1969), Les affinités morphologiques néandertalien du Pech-de-l'Azé (Dordogne). *Comptes Rendus de l'Académie des Sciences de Paris, Série D. – Sciences naturelles* 268, 1485-1488. P; Ferembach D. et al. (1970), L'enfant du Pech-de-l'Azé. *Archives de l'Institut de Paléontologie Humaine* 33, 1-186. P; Jacobs Z., et al. (2016), The age of three Middle Palaeolithic sites: Single-grain optically stimulated luminescence chronologies for Pech de l'Azé I, II and IV in France. *Journal of Human Evolution* 95, 80-103. https://doi.org/10.1016/j.jhevol.2016.03.010. D, Str; Legoux P. (1969), Détermination de l'âge dentaire de l'enfant néandertalien du Pech-de-l'Azé (Dordogne). *Comptes Rendus de l'Académie des Sciences de Paris, Série D. – Sciences naturelles*, 268, 2875-2878. P; Bruno M., Soressi M. (2000), A propos de la position chronostratigraphique de l'enfant du Pech-de-l'Azé I (commune de Carsac, Dordogne) : la résurrection du fantôme. *Paléo* 12, 339-352. https://doi.org/10.3406/pal.2000.1606. Str, D; Patte E. (1957), *L'enfant néandertalien du Pech-de-l'Azé*. Masson, Paris, 230. P, R; Soressi M. et al. (2007a), The Pech-de-l'Azé I Neandertal child: ESR, uranium-series, and AMS 14C dating of its MTA type B context. *Journal of Human Evolution* 52 (4), 455-466. https://doi.org/10.1016/j.jhevol.2006.11.006. D; Soressi M. et al.(2007b), Pech-de-l'Azé I (Dordogne, France): nouveau regard sur un gisement moustérien de tradition acheuléenne connu depuis le XIXe siècle. *Mémoire de la Société Préhistorique Française*, 47, 95-132. A, P, R, Z.

18. There are 4 caves and shelters, close to each other, named Pech de l'Azé: Pech de l'Azé I, II, III & IV. Only Pech de l'Azé I and Pech de l'Azé IV have yielded human remains.

Code data collected by: Jean-Luc Voisin

1. **PECH DE L'AZÉ IV**

2. Cave, near the village of Carsac, 5 km South of Sarlat (Dordogne), France; 44°51'25" N, 1°16'34" E (these are the coordinates of Pech de l'Azé I, this site is close to it).

3. F. Bordes 1952 (discovery), B. Mortureux 1953 to 1956 (excavations), F. Bordes 1970 to 1977 (excavations).

4. Collapsed shelter.

5. No

6. Layer F4 (according to Bordes) for P.A.IV, D12 1444; layer 5A (according to Turq et al. 1999) for n°4490.

7.1 Mousterian and Asinipodian.

7.2 Levallois and Quina.

7.3 No

7.4 No

7.5 No

7.6 No

7.7 Firesplaces, mostly in layers 8 and 7.

8.1 Large mammals, small mammals.

8.2 No

9.1 No

9.2 ^{14}C, OSL, TL (Jacobs et al., 2016, Jankowski, 2018). + Layer F4 (with P.A.IV, D12 1444): 61 000 ± 5 000 years old. + Layer 5A(with remains 4490): Circa 74 000 ± 5 000 years old.

9.3 Middle Palaeolithic based on lithic techno-typology.

10. P.A.IV, D12 1444; n°4490. MNI: 2.

10.1 –

10.2 P.A.IV, D12 1444: between 1 and 2 years old (closure of the root, Turq et al., 2011)/ 3 years old (slight wear of the crown and heavy calcification of the root apex, Ménard, 1984); n° 4490: between 4 and 5 years old (if it is a M1) (root development and tooth calcification).

10.3 –

10.4 P.A.IV, D12 1444: LdI^{1} (i), n° 4490: Upper (?) R (?) M germ (f) (most likely a first molar).

10.5 –

11. Musée national de Préhistoire, 1 rue du musée, 24620 Les Eyzies, France.

12. –

13. –

14.1 No

14.2 –

14.3 –

14.4 –

14.5 –

14.6 –

14.7 –

14.8 –

14.9 –

14.10 –

15. No

16. No

17. Bordes F. (1954), Les gisements du Pech de l' Azé (Dordogne). I – Le Moustérien de tradition acheuléenne. *L'Anthropologie* 58, 401-432. A; Bordes F. (1975), Le gisement du Pech de l'Azé IV. Note préliminaire. *Bulletin de la Société Préhistorique française* 72 (1), 293-308. https://doi.org/10.3406/bspf.1975.8335 A, Str; Dibble H.L. et al. (Eds) (2018), *The Middle Paleolithic Site of Pech de l'Azé IV*. Springer, Dordrecht, 260. A, P, D; Jacobs Z. et al. (2016), The age of three Middle Palaeolithic sites: Single-grain optically stimulated luminescence chronologies for Pech de l'Azé I, II and IV in France. *Journal of Human Evolution* 95, 80-103. https://doi.org/10.1016/j.jhevol.2016.03.010. D; Ménard J. (1984), L'incisive temporaire supérieure centrale gauche moustérienne de tradition acheuléenne du Pech-de-1'Azé IV (Dordogne). *Bulletins et Mémoires de la Société d'anthropologie de Paris*, Série XIV, Tome 1 (1), 19-24. https://doi.org/10.3406/bmsap.1984.3924. R, P; Jankowski N. (2018), An absolute chronological framework for Pech IV. In: Dibble H.L. et al. (Eds), *The Middle Paleolithic Site of Pech de l'Azé IV*. Springer, Dordrecht, 75-81.D; Richter D. et al. (2013), The late Middle Palaeolithic in Southwest France: new TL dates for the sequence of Pech de l'Azé IV. *Quaternary International* 294, 160-167. https://doi.org/10.1016/j.quaint.2012.05.028. D;Turq A. et al. (2011), Les fouilles récentes du Pech de l'Azé IV (Dordogne). *Gallia préhistoire* 53, 1-58. https://doi.org/10.3406/galip.2011.2486. R, A, P; https://www.oldstoneage.com/

18. There are 4 caves and shelters, close each other, named Pech de l'Azé: Pech de l'Azé I, II, III & IV. Only Pech de l'Azé I and Pech de l'Azé IV have yielded human remains.

Code data collected by: Dušan Mihailović, Bojana Mihailović, Predrag Radović

1. **PEŠTURINA**, Pešturina Cave
2. Jelašnica, Niška Banja, southern Serbia; 43°17’44” N, 22°02’45” E.
3. D. Mihailović, 2005.
4. Cave deposits.
5. No
6. Layer 2 (Pes-1), contact of Layers 3 and 4 (Pes-2), and Layer 4b (Pes-3).

7.1 Central European Charentian (Layers 3 and 4).

7.2 Quina, Levallois, Discoid (Layers 4 and 3).

7.3 A fragment of a cave bear cervical vertebra with 10 sub-parallel grooves (Layer 4b).

7.4 No

7.5 No

7.6 No

7.7 No

8.1 Large mammals.

8.2 Layers 4c-4a: *Pinus*, deciduous *Quercus*, *Tilia* and other angiosperm woody taxa; heliophytes such as *Artemisia* and Poaceae; Layer 3: *Artemisia*-Poaceae steppes, *Quercus* patches, conifers and legumes (Ochando et al. 2024).

9.1 No

9.2 Layer 3, C14: 44.6 - 43.5 ka cal BP, ESR: 38.9 ± 2.5 ka; Layer 4a, C14: weighted mean of 92 ± 4.4 ka, ESR: 93.1 ± 1.4 ka; Layer 4b, ESR: 110.5 ± 11.1 ka (Alex, Boaretto 2014; Blackwell et al. 2014; Alex et al. 2019).

9.3 –

10. Pešturina 2 (Pes-2), Pešturina 3 (Pes-3).

10.1 –

10.2 Pes-2: subadult (overall size); Pes-3: late childhood (root development, wear).

10.3 Pes-2: L radial shaft (proximal to middle portion) (ff).

10.4 Pes-3: RM^1.

10.5 –

11. National Museum of Serbia, Trg Republike 1a, Belgrade, Serbia.
12. –
13. –

14.1 Dental calculus.

14.2 Pes-3.

14.3 Faculty of Philosophy – University of Belgrade, Serbia.

14.4 –

14.5 –

14.6 –

14.7 –

14.8 –

14.9 –

14.10 –

15. No
16. No

17. Mihailović, D., Milošević, S. (2012), Istraživanja paleolitskog nalazišta Pešturina kod Niša. *Glasnik Srpskog arheološkog društva* 28, 87-106. A; Alex, B., Boaretto, E. (2014), Radiocarbon chronology of Pešturina Cave. In: Mihailović, D. (Ed.), *Palaeolithic and Mesolithic Research in the Central Balkans*. Serbian Archaeological Society, Belgrade, 39-49. D; Blackwell, B.A.B., et al. (2014), ESR dating ungulate tooth enamel from the Mousterian layers at Pešturina, Serbia. In: Mihailović, D. (Ed.), *Palaeolithic and Mesolithic Research in the Central Balkans*. Serbian Archaeological Society, Belgrade, 21-38. D; Majkić, A., et al. (2018), Sequential incisions on a cave bear bone from the Middle Paleolithic of Pešturina cave, Serbia. *Journal of Archaeological Method and Theory* 25 , 69-116. A; Radović, P., et al. (2019), The first Neanderthal specimen from Serbia: Maxillary first molar from the Late Pleistocene of Pešturina Cave. *Journal of Human Evolution* 131, 139-151. P; Alex, B., et al. (2019), Radiocarbon chronology of Middle and Upper Paleolithic sites in Serbia, Central Balkans. *Journal of Archaeological Science: Reports* 25, 266-279. D; Milošević, S. (2020), *Competition between humans and large carnivores: Case studies from the Late Middle and Upper Palaeolithic of the Central Balkans*. BAR International Series 2961, Oxford, Z. Lindal, J.A., et al. (2020), Postcranial hominin remains from the Late Pleistocene of Pešturina Cave (Serbia). *Quaternary International* 542, 9-14. P; Mihailović, D., et al. (2022), Neanderthal settlement of the Central Balkans during MIS 5: Evidence from Pešturina Cave, Serbia. *Quaternary International* 610, 1-19. A, D, Z; Fellows Yates, J.A., et al. (2021), The evolution and changing ecology of the African hominid oral microbiome. *Proceedings of the National Academy of Sciences of the United States of America* 118 (20), e2021655118. G; Ochando, J, et al. (2024), Balkan Neanderthals: The Late Pleistocene palaeoecological sequence of Pešturina Cave (Niš, Serbia), Quaternary Science Reviews 330, 108600, https://doi.org/10.1016/j.quascirev.2024.108600. E

Code data collected by: Jean-Luc Voisin

1. **PETIT-PUYMOYEN**

2. Cave and rock shelter near the village of Puymoyen, Charente, France, 5 km South of Angoulême; 45°37' N, 0°11' E.

3. A. Favraud 1907.

4. Cave deposits.

5. No

6. *Abri Commont* – stratigraphy unclear, PPm 1 to PPm4 (a & b) come from the brecciated level. *Cave* – stratigraphy unclear, layer 2 is the only fossiliferous layer with PPm 5, PPM 10 and PPm 11. *Unknown location*- PPm 6 (a & b), PPm 8 and PPm 9.

7.1 Mousterian

7.2 Mousterian, Quina type (for the both sites).

7.3 Pierced reindeer antlers, remains of bones used as anvils or compressors.

7.4 No

7.5 Yes (*Pecten maximus*): one and broken.

7.6 No

7.7 No

8.1 Large and small mammals, birds.

8.2 No

9.1 No

9.2 No

9.3 No

10. PPm 1 (Petit-Puymoyen 1), PPm 2 (Petit-Puymoyen 2), PPm 3 (Petit-Puymoyen 3), PPm 4 (Petit-Puymoyen 4), PPm 5 (Petit-Puymoyen 5), PPm 6 (Petit-Puymoyen 6), PPm 7 (Petit-Puymoyen 7) and PPm without number (4 remains). Following Vandermeersch (1976) who published the most complete inventory. PPm 3, PPm 4a and PPm 4b could belong to the same individual.

10.1 –

10.2 PPm 1: adolescent, under 15 years old (M_3 is lost, but it still has its alveolar space and the M_2 shows no distal contact); PPm 2: about 15 years old (unclosed roots apex of the M^3); PPm 3: adolescent (wear of the teeth and a functional M2 as shown by the distal wear facet on the M1); PPm4b: about 15 years old (unclosed roots apex of the M_3); PPm 5: between 2 and 4 years old (the orientation of the roof of the auditory meatus, the synostosis of the petrosquamous suture, the degree of development of the tympanal bone).

10.3 PPm 7: occipital bone (ff); PPm 5: R temporal bone (f); PPm 2: L maxillary bone (ff) with M^1 to M^3; PPm 1: L mandible (f) with P_3 to M_2; PPm 3: R mandible R (f) with I_1 root, I_2 root, C_1, P_3, M_1 and RI_1 root; PPm 6: R capitate and L hamate (these two bones should be named PPm6a and PPm6b respectively); PPm unnumbered: L cuboid (should be named PPm 8); PPm unnumbered: medial cuneiform (should be named PPm 9).

10.4 PPm 4: RM_2 and RM_3 (these two teeth should be named PPm4a and PPm4b respectively); PPm unnumbered: I^2 (was associated to PPm 5 in Oakley et al. (1971), should be named PPm 10); PPm unnumbered: I_1 (was associated to PPm 5 in Oakley et al. (1971), should be named PPm 11).

10.5 –

11. Institut de paléontologie Humaine, 1 rue René Panhard, 75013 Paris, France.

12. –

13. –

14.1 No

14.2 –

14.3 –

14.4 –

14.5 –

14.6 –

14.7 –

14.8 –

14.9 –

14.10 –

15. No

16. No

17. Boeuf O. (1969), Faune du gisement Moustérien du Petit-Puymoyen. *Bulletin de la Société Archéologique et Historique de la Charente*: 53–128. Z, P; Duport L., Vandermeersch B. (1965), III. Les gisements moustériens de l'abri Commont, de la grotte Simard et de la grotte Castaigne. *Bulletin de l'Association Française pour l'Etude du Quaternaire* 2 (3-4), 189-192. https://doi.org/10.3406/quate.1965.1005. A, Str; Elyaqtine M. (1997), L'os temporal du Petit-Puymoyen. *Comptes Rendus de L'Académie des Sciences, Série 2 – Terre Planètes* 325 (11), 905-908. https://doi.org/10.1016/S1251-8050(99)80192-X. P, R; Elyaqtine M. (1997), L'os temporal du Petit-Puymoyen. *Comptes Rendus de l'Académie des Sciences, Série 2 – Terre Planètes* 325 (11), 905-908. https://doi.org/10.1016/S1251-8050(99)80192-X. P; Favraud A. (1908), La station Moustérienne du Petit-Puymoyen, commun de Puymoyen (Charente). *Revue de l'École d'Anthropologie de Paris* 18, 46-66. A; Gabis R. (1956), Etude de la mandibule humaine de la station moustérienne de Petit-Puymoyen (Charente). *Bulletin de la Société Géologique de France* 6, 1021-1028. P, R; Granat J., Peyre E. (2010), Les dents fossiles de Petit-Puymoyen, des descriptions de Siffre à nos jours. *Actes – Société Française d'histoire de l'Art Dentaire (XXe congrès, Pouy-sur-Vannes)* 15, 31-37. https://www.biusante.parisdescartes.fr/sfhad/actes/xxe-congres-pouy-sur-vannes-2010/ P; Piveteau J., Dechaseaux C. (1957), *Traité de paléontologie – Tome VII: primates, paléontologie humaine*. Masson, Paris, 675. P, R; Quam R. et al. (2011) New Observations on the Human Fossils from Petit-Puymoyen (Charente). *Paleo-Anthropology* 2011, 95-105. https://doi.org/10.4207/PA.2011.ART44. P, R; Ready E., Morin E. (2019), Preliminary analysis of faunal remains from three Middle Paleolithic deposits in Charente, France. *Journal of Archaeological Science: Reports* 24, 290-301. https://doi.org/10.1016/j.jasrep.2019.01.020. Z, E; Siffre A. (1908), Étude des dents humaines. *Revue de l'École d'Anthropologie de Paris* 18, 66-72. P, R; Vandermeersch B. (1976), Les Néandertaliens en Charente. In: De Lumley H. (ed.). *La Préhistoire Francaise*. CNRS, Paris, 584-587. P

18. Excavations in the 1960s revealed two areas on this site. The first is a rock shelter, known as the Abri Commont, which lies in front of the current entrance to the cave and whose sediments have been covered by large blocks of limestone corresponding to the collapse of the cave roof. The second zone is represented by the actual cave. Human remains come from these two aera.

Code data collected by: Giulia Marciani, Erica Piccirilli, Marco Peresani, Stefano Benazzi

1. **POGGIO**, Grotta del Poggio
2. Cave opening more than 10 m above sea level, 400 m East Marina di Camerota, Salerno, Campania, Italy; 40°00'01" N, 15°22'55" E.
3. P. Parenzan 1954 (discovery); M.V. Chiappella 1956 (identification of Mousterian); A. Palma di Cesnola 1965-1969 (excavations, discovery of human remains); excavations resumed in 2022 (U. R. Preistoria e Antropologia. Università degli Studi di Siena).
4. Cave deposits (Palma di Cesnola, 2001).
5. No
6. Grotta del Poggio 1: layer 6 (Messeri and Palma di Cesnola, 1976; Palma di Cesnola, 1969, 1996).
7.1 Mousterian (Palma di Cesnola, 2001).
7.2 Non Levallois flake production.
7.3 No
7.4 No
7.5 No
7.6 No
7.7 No
8.1 Large mammals (Bartolomei et al., 1975; Messeri e Palma di Cesnola, 1976; Palma di Cesnola, 1996; Palma di Cesnola e Messeri, 1967).
8.2 No
9.1 No
9.2 OSL dating of the deposits in progress.
9.3 MIS 6, based on stratigraphic connection with the closed Riparo del Poggio (Boscato 2009); Pre-Würm based on faunal association (Sala 1979); Middle Pleistocene, layer 6 (Messeri and Palma di Cesnola, 1976; Palma di Cesnola, 1969, 1996).
10. Grotta del Poggio 1.
10.1 –
10.2 Grotta del Poggio 1: Adult (dental development).
10.3 –
10.4 LM^1.
10.5 –
11. U. R. Preistoria e Antropologia. Università degli Studi di Siena Dipartimento di Scienze Fisiche, della Terra e dell'Ambiente Via Laterina, 8, 53100, Siena, Italy.
12. –
13. –
14.1 –
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –

14.9 –
14.10 –
15. No
16. No
17. Bartolomei, G., et al. (1975), Visita ai giacimenti del Poggio e della cala a Marina di Camerota (Salerno). *Atti XVII Riunione Scientifica Istituto Italiano di Preistoria e Protostoria*, Firenze: 107-140. A; Messeri, P. (1975), Resti umani (denti e parti dell'arto inferiore) provenienti da strati musteriani in grotta a Marina di Camerota (Salerno). *Atti Riunione Scientifica Istituto Italiano di Preistoria e Protostoria*, Firenze: 171-185. P; Messeri, P., Palma di Cesnola, A. (1976), Contemporaneità di paleantropi e faneroantropi sulle coste dell'Italia meridionale. *Zephirus*, 26-27: 7-30. P, A; Orban, R. (1988) (a cura di). Italy. In *Hominid Remains: an up-date*. Department of Anthropology and Human Genetics, Université Libre de Bruxelles (U.L.B.), Belgium. P; Palma di Cesnola, A. (1969), Il Musteriano della Grotta del Poggio a Marina di Camerota (Salerno). In: *Scritti sul Quaternario in onore di A. Pasa*. Museo Civico di Storia Naturale di Venosa (ed). A; Palma di Cesnola, A. (1996*), Le Paléolithique inférieur et moyen en Italie*. Paris: Ed. Jerome Millon. A; Palma di Cesnola, A. (2001), Il Paleolitico inferiore e medio in Italia. ed. Millenni. A; Palma di Cesnola, A., Messeri, P. (1967), Quatre dents humaines paléolithiques trouvées dans des cavernes d'Italie méridionale. *L'Anthropologie*, 71: 249-262. P; Piccirilli, E. et al. (in prep), Taxonomic reassessment of the human remains from the Middle Paleolithic site of Grotta del Poggio (Cilento, southern Italy). P; Sala, B. (1979), La faune pré-wurmienne des grands mammifères de la Grotte du Poggio (Marina di Camerota, Salerno). *Atti della Società Toscana di Scienze Naturali*, Memorie, Serie A, 86. Pisa. Z
18. Grotta del Poggio 1 is the only Neandertal remain found in this site; the talus Grotta del Poggio 2 dates to the Bronze age (Piccirilli et al.), the femur head Grotta del Poggio 3 is animal.

Code data collected by: Florent Rivals, Francesca Romagnoli

1. **PRADO VARGAS**
2. Spain; 43°1’ N, 3°37’ W.
3. T. Torres 1986.
4. Cave deposits.
5. No
6. Level N4.
7.1 Mousterian.
7.2 Discoid and Levallois.
7.3 Bone retouchers.
7.4 No
7.5 No
7.6 No
7.7 Hearths.
8.1 Large mammal, small mammals.
8.2 Herbaceous, shrubs/tree.
9.1 No
9.2 Archaeological sediment, OSL, 46.2 ± 3.2 ka to 48.3 ± 3.2 ka; Charcoal, radiocarbon, 42,115 to 41,227 cal BP (Navazo Ruiz et al., 2021).
9.3 –
10. PV-1360.
10.1 –
10.2 PV-1360: juvenile (tooth development).
10.3 –
10.4 PV-1360: LdM_1.
10.5 –
11. Universidad de Burgos, Paseo de los Comendadores s/n, 09001 Burgos (Spain).
12. –
13. –
14.1 –
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No
17. Navazo Ruiz, M., et al., (2021), Late Neanderthal subsistence strategies and cultural traditions in the northern Iberia Peninsula: insights from Prado Vargas, Burgos Spain. *Quat Sci Rev* 254:106795. P, A, Z, R, E; Navazo Ruiz, M., et al. (2022), Using cores as tools: use-wear analysis of Neanderthal recycling processes in Level 4 at Prado

Vargas (Cornejo, Merindad de Sotoscueva, Burgos, Spain). *Lithic Technology* ,1-19. A; de la Fuente Juez, H., et al. (2023), Too good to go? Neanderthal subsistence strategies at Prado Vargas Cave (Burgos, Spain). *Archaeol Anthropol Sci* 15, 164. Z

Code data collected by: Bruno Maureille, Jean-Luc Voisin

1. **REGOURDOU**

2. Cave, near the village of Montignac-Lascaux (was named Montignac-sur-Vézère or Montignac before 2020), Dordogne, France, 50 km East from Perigueux; 45°03'18" N, 01°10'42" E.

3. Regourdou 1: discovered by A. Antonietti, September 22nd 1957; Regourdou 2: discovered by E. Bonifay, between 1961 and 1964 (included); Researchers who originally studied the human remains: Regourdou 1: J. Piveteau, H.-V. Vallois, B. Vandermeersch, E. Trinkaus, B. Maureille, T. Holliday, R. Rmoutilová and A. Gómez-Olivencia. Regourdou 2: D. Coutinho Nogueira and C. Couture-Veschambre.

4. Cave deposits.

5. Yes (Regourdou 1).

6. Layer 4: Regourdou 1; theoretically Layer 4 (but in fact unknown): Regourdou 2.

7.1 Mousterian (layer 4).

7.2 Discoid (layer 4).

7.3 No

7.4 No

7.5 No

7.6 No

7.7 Bonifay (1964), Bonifay et al. (2007): different anthropic structures named "pierriers" and "pits" (layers 5, 4, 3); Maureille et al. (2015): nothing was really existing.

8.1 Large and small mammal.

8.2 No

9.1 No

9.2 No

9.3 Layer 4: MIS 5, chronostratigraphy and faunal assemblages.

10. Regourdou 1, Regourdou 2. MNI: 2.

10.1 Regourdou 1: male.

10.2 Regourdou 1: young adult (occlusal crown mandibular teeth attrition); Regourdou 2: mature bone, undetermined.

10.3 Régourdou 1: Axial skeleton – mandible (d) with all teeth, 5 cervical vertebrae (d), 7 vertebrae including one thoracic vertebra (f) and one lumbar vertebra (d), sternum (i), sacrum (f), ribs (3 left and 4 right) (f). Shoulder girdle and upper limbs- R clavicle (i) and L clavicle (f), R humerus (i) and L humerus (f), R radius (f) and L radius (i), R ulna (f) and L ulna (i), 3 R carpal bones, 4 L carpal bones, L metacarpal 1 (i), L and R metacarpal 2 (i), L and R metacarpal 3 (i), L metacarpal 4 (i), L and R metacarpal 5 (i), L proximal hand phalanx 1 (i), L and R proximal hand phalanx 2 (i), L and R proximal hand phalanx 3 (i), L and R proximal hand phalanx 4 (i), L and R proximal hand phalanx 5 (i), L and R intermediate hand phalanx 2 (i), R intermediate hand phalanx 3 (i), L and R intermediate hand phalanx 4 (i), L and R intermediate hand phalanx 5 (i), L distal hand phalanx 1 (i), L distal hand phalanx 2 (i), L and R distal hand phalanx 3 (i), L and R distal hand phalanx 4 (i), L and R distal hand phalanx 5 (i). Pelvic girdle and lower limbs- L and R os coxae (ff), L femur (ff), R fibula (ff) and L fibula (f), L and R patella, L and R talus (i), L and R calcaneus (i), R navicular (i), R 3rd metatarsal (i), R 4th metatarsal (i), R 5th metatarsal (i), proximal

foot phalanx 1 (i), L and R proximal foot phalanx 2 (?) (i), L(?)proximal foot phalanx 3 (?) (f), R (?)intermediate foot phalanx 2 or 3 R(i), L(?) intermediate foot phalanx 4 or 5 (i), L and R distal foot phalanx 1 (i), L(?)distal foot phalanx II (?), R(?) distal phalanx 2 or 3 (i), L(?) distal phalanx 4 (?), L(?)distal foot phalanx 5 (?) (i). Regourdou 2 : R calcaneus (f).

10.4 No isolated teeth.

10.5 Regourdou 1: marked bilateral asymmetry of the sacral alae (Rmoutilová et al., 2020), vascularized external cortical 7th right rib (Gomez-Olivencia et al., 2018).

11. Regourdou 1: Musee d'Art et d'Archeologie du Perigord at Perigueux, 22 cours Tourny, 24000 Périgueux, France. Regourdou 2: Musée de site, Regourdou-Nord, 24290 Montignac-Lascaux, France.Cultural remains: Musée national de Préhistoire, 1 rue du Musée, 24620 Les Eyzies-de-Tayac, France and Musée de site, Regourdou-Nord, 24290 Montignac-Lascaux, France. Faunal remains: Musée national de Préhistoire, 1 rue du Musée, 24620 Les Eyzies-de-Tayac, France and Musée de site, Regourdou-Nord, 24290 Montignac-Lascaux, France.

12. Regourdou 1: Musée national de Préhistoire, 1 rue du Musée, 24620 Les Eyzies-de-Tayac, France and UMR5199 PACEA, Université de Bordeaux, Allée Geoffroy Saint-Hilaire – CS 50023, 33615 Pessac cedex – France.

13. Repositories for Regourdou 1 and 2 digital images: Regourdou 1: Musée national de Préhistoire, 1 rue du Musée, 24620 Les Eyzies-de-Tayac, France and UMR5199 PACEA, Université de Bordeaux, Allée Geoffroy Saint-Hilaire – CS 50023, 33615 Pessac cedex - France.

14.1 No

14.2 –

14.3 –

14.4 –

14.5 –

14.6 –

14.7 –

14.8 –

14.9 –

14.10 –

15. No

16. No

17. Bonifay E. (1964), La grotte de Régourdou (Montignac, Dordogne). Stratigraphie et industrie lithique moustérienne. *L'Anthropologie (Paris)* 68 (1-2), 49-64. Str, A; Bonifay E. (1965), Un ensemble rituel moustérien à la grotte du Régourdou. In, *Atti del VI congresso internazionale de la Scienza Prehistoriche e protohistoriche*, vol II, 1965, Rome, 136-140 A; Bonifay M.-F. (1989), Analyse taphonomique des ursidés de la grotte sépulcrale néandertalienne du Regourdou (Dordogne) – France. In, Patou M. et Freeman L. G. (eds), *La subsistance, volume 6*. Liège, ERAUL, 33, 45-47 Z; Bonifay E. et al. (2007), La sépulture néandertalienne du Regourdou (Montignac-sur-Vézère, Dordogne). *Documents du C.E.R.L.A.T.*, Mémoire n°4, 16 p A; Cavanhié N. (2009-2010), L'ours qui a vu l'Homme ? Etude archéozoologique et taphonomique du site paléolithique moyen de Regourdou (Montignac, Dordogne, France). *Paleo* 21, 39-64 Z; Coutinho-Nogueira D. et al. (2017), Le calcanéus "Regourdou 2":

étude morphométrique comparative et discussion autour de sa place dans la variabilité des néandertaliens. *Paleo* 28, 71-89. P; Delpech F. (1996), L'environnement animal des Moustériens Quina du Périgord. *Paleo*, 8, 31-46. Z; Gómez-Olivencia A. et al. (2013), The vertebral column of the Regourdou 1 Neandertal. *Journal of Human Evolution* 64 (6), 582-607 P; Gómez-Olivencia A. et al. (2019), The costal skeleton pf the Regourdou 1 Neandertal. *Journal of Human Evolution* 130, 151-171 P; Madelaine S. et al. (2008), Nouveaux restes humains moustériens rapportés au squelette néandertalien de Regourdou 1 (Regourdou, commune de Montignac, Dordogne, France). *Paleo* 20, 101-114 P; Maureille B. et al. (2001), Les dents inférieures du Néandertalien Regourdou 1 (commune de Montignac, Dordogne) : analyses métriques et comparatives. *Paleo* 13, 183-200 P; Maureille B. et al. (2015), Importance des données de terrain pour la compréhension d'un potentiel dépôt funéraire moustérien : le cas du squelette de Regourdou 1 (Montignac-sur-Vézère, Dordogne, France). *Paleo* 26, 139-159. A; Maureille B. et al. (2015), Nouveaux restes humains provenant du gisement de Regourdou (Montignac-sur-Vézère, Dordogne, France). *Paleo* 26, 117-138. P; Pablos A. et al. (2019), Neandertal foot remains from Regourdou 1 (Montignac-sur-Vézère, Dordogne, France*). Journal of Human Evolution* 128, 17-44. P; Meyer V. et al. (2011) Un nouveau bassin néandertalien. *Paleo* 22, 207-222. http://paleo.revues.org/2134. A, P; Pelletier M. (2015), Lièvre et lapin à Regourdou (Montignac-sur-Vézère, Dordogne, France) : Études paléontologique et taphonomique de deux accumulations osseuses d'origine naturelle. *Paleo* 26, 161-183 Z, E; Pelletier M et al. (2017), Rabbits in the grave! Consequences of bioturbation on the Neandertal "burial" at Regourdou (Montignac-sur-Vézère, Dordogne). *Journal of Human Evolution* 110, 1-17. Z, D; Piveteau J. (1959), Les restes humains de la grotte de Regourdou (Dordogne). *Comptes Rendus Hebdomadaires des Séances de l'Académie des Sciences* 248, 40-44 P, A; Piveteau J. (1963), La grotte de Régourdou (Dordogne). Paléontologie humaine*. Annales de Paléontologie* 49, 285-304 P, A; Piveteau J. (1964) La grotte de Régourdou (Dordogne). Paléontologie humaine. *Annales de Paléontologie* 50 (2), 155-194. P; Piveteau J. (1966), La grotte de Régourdou (Dordogne). Paléontologie humaine. *Annales de Paléontologie* 52 (2), 163-194. P; Rmoutilová R. et al. (2020), A case of marked bilateral asymmetry in the sacral alae of the Neandertal specimen Regourdou 1 (Périgord, France). *American Journal of Physical Anthropology* 171, 242-259. P; Rmoutilová R. et al. (2024), Sex estimation of the adult Neandertal Regourdou 1 (Montignac, France): implications for sexing human fossil remains. *Journal of Human Evolution* 189, 103470. P; Simard S. (1968), Etude paléontologique et paléoclimatique de la microfaune du Regourdou (Montignac, Dordogne, France). *Le Naturaliste canadien* 95, 1435-1457. E; Vallois H.-V. (1965), Le sternum néandertalien du Regourdou. *Anthropologischer Anzeiger* 29, 273-289. P; Vallois H.-V., de Félice S. (1976), Le sternum néandertalien du Regourdou. Note complémentaire. *Anthropologischer Anzeiger* 35, 229-235. P; Volpato V. et al. (2012), Hand to mouth in a Neandertal: right-handedness in Regourdou 1. *PLoS ONE* 7, e43949. P; Vandermeersch B., Trinkaus E. (1995), The postcranial remains of the Regourdou 1 Neandertal: the shoudler and arm remains. *Journal of Human Evolution* 28 (5), 439-476. P

18. Research on Regourdou 1 specimens are still in process under the control of B. Maureille, T. Holliday and C. Couture-Veschambre.

Code data collected by: Jean-Luc Voisin

1. **RESCOUNDUDOU**

2. Rock shelter close to the village og Sébazac-Concourès, Aveyron, France, about 10 km. North of Rodez; 44°25'08" N, 2°34'17" E.

3. Dicovery in 1981; J. Jaubert 1983-1987 (excavations).

4. Occupation deposits.

5. No

6. C1.

7.1 Mousterian (type La Ferrassie).

7.2 Levallois.

7.3 No

7.4 No

7.5 No

7.6 No

7.7 None

8.1 Large mammals.

8.2 None

9.1 No

9.2 Stalagmite floor, U-Th, between 140 000 and 105 000 BP.

9.3 Level C1 MIS 5 (large mammals).

10. Rescoundudou I: catalogue number 12 200; Rescoundudou II: catalogue number 14186'; Rescoundudou III: catalogue number 14766; Rescoundudou IV: no catalogue number; Rescoundudou V: no catalogue number. MNI: 2.

10.1 –

10.2 Rescoundudou I, II, IV and V are deciduous teeth and belong to at least one individual around ten years old based on root resorption.

10.3 –

10.4 Rescoundudou I: RdM_2 (roots almost completely resorbed); Rescoundudou II: LdM_1 (roots almost completely resorbed); Rescoundudou III: LM_1 (ff); Rescoundudou IV: LdM^2 (ff); Rescoundudou V: RI^2 (germ).

10.5 –

11. Musée Fenaille, 14 Place Eugène-Raynaldy, 12000 Rodez, France.

12. Musée Fenaille, 14 Place Eugène-Raynaldy, 12000 Rodez, France.

13. –

14.1 No

14.2 –

14.3 –

14.4 –

14.5 –

14.6 –

14.7 –

14.8 –

14.9 –

14.10 –

15. No

16. No

17. Jaubert J. (1983), Le site moustérien du Rescoundudou (Sébazac-Concourès, Aveyron), présentation et problématique. *Bulletin de la Société Préhistorique Française*, 80 (3), 80-87. https://doi.org/10.3406/bspf.2008.13779. A; Jaubert J., et al. (1992), Le site paléolithique moyen du Rescoundudou (Aveyron, France). Datations U/Th et interprétation chronostratigraphique, *L'Anthropologie (Paris)*, 96 (1), 103-112. D; Jaubert J., Maureille B. (2008) Le gisement moustérien du Rescoundudou (Sébazac-Concourès, Aveyron): inventaire des restes humains. *Bulletin de la Société Préhistorique Française*, 105 (4), 677-690. https://doi.org/10.3406/bspf.2008.13779. P

Code data collected by: Jean-Luc Voisin

1. **RIGABE**

2. Close to the village of Artigues (Var), 6 km East of Rian, France; no exact coordinates

3. A.F. Marion, around 1860; Marsit brothers the begining of the 20th century; In 1905 C. Cottes 1905; M. Gaffier 1931 – 1932; M.A. de Lumley and M. Escalon 1953 – 1956; E. Bonifay 1959.

4. Cave deposit.

5. No

6. Layers F to H (Rigabe 1); layer E (Rigabe 2).

7.1 Mousterian.

7.2 Levallois.

7.3 Single bone tool.

7.4 No

7.5 No

7.6 No

7.7 Fire places in Mousterian layers.

8.1 Large mammals.

8.2 No

9.1 No

9.2 No

9.3 Stratigraphy, based on color and rock types.

10. Rigabe 1: LdI_2; Rigabe 2: LdC. MNI: 2.

10.1 –

10.2 Rigabe 1: LdI_2, 2 to 4 years (tooth wear and root calcification); Rigabe 2: LdC, 2 to 6 years (tooth wear).

10.3 –

10.4 Rigabe 1: LdI_2; Rigabe 2: LdC.

10.5 –

11. Unknown location, was at the Laboratoire de paléontologie des vertébrés et de paléontologie humaine, facultés des sciences, Paris 5, France.

12. –

13. –

14.1 –

14.2 –

14.3 –

14.4 –

14.5 –

14.6 –

14.7 –

14.8 –

14.9 –

14.10 –

15. No

16. No

17. Bonifay E. (1964/1965). Mousterien et Premousterien de la grotte de Rigabe (Artigues, Var). *Quartär*, 15/16, 61-78. https://doi.org/10.7485/qu.1965.15.81933 A, D; de Lumley M.A. (1973) Anténéandertaliens néandertaliens du bassin méditerranéen occidental européen. *Etude Quaternaire*, 2, 1-603. P; Defleur A. (1988). Contribution à la connaissance de l'industrie osseuse du Paléolithique moyen. *Bulletin de la Société Préhistorique française*. 85 (5), 138-140. https://doi.org/10.3406/bspf.1988.9334 A; Escalon de Fonton M., de Lumley H. (1960) Le Paléolithique moyen de la grotte de Rigabe (Artigues, Var). *Gallia préhistoire*, 3, 1-46. https://doi.org/10.3406/galip.1960.1166 A

Code data collected by: Giulia Marciani, Erica Piccirilli, Marco Peresani, Stefano Benazzi

1. **ROCCIA SAN SEBASTIANO**, Grotta di Roccia San Sebastiano
2. Campania, Italy; 41°13'51" N, 14°7'48" E.
3. C. Collina and M. Piperno discovered the remains during excavation in 2005.
4. Cave deposit (Collina et al. 2020; Oxilia et al. 2022).
5. No
6. RSS1: Trench E15-E14; t34; Cg (Collina et al. 2020; Oxilia et al. 2022).
7.1 Mousterian (Collina et al. 2020).
7.2 Levallois (Collina et al. 2020).
7.3 No
7.4 No
7.5 No
7.6 No
7.7 No
8.1 Large and small mammals (Collina et al., 2008).
8.2 No
9.1 No
9.2 Mousterian layer (trench F14 spit t39; ETH- 99085.1.1), C1444,810-44,230 cal BP (Oxilia et al., 2022).
9.3 –
10. RSS1.
10.1 –
10.2 Juvenile, 9 to 12 years old (root resorption is at a Res3/4 stage suggesting that the tooth had been been lost antemortem (Oxilia et al., 2022)).
10.3 –
10.4 LdM_2.
10.5 –
11. –
12. –
13. –
14.1 –
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. Yes (Silvestrini et al. 2022, 2024).
17. Aiello, G., et al. (2018), Geomorphological and paleoenvironmental evolution in the prehistoric framework of the coastland of Mondragone, southern Italy. *Quaternary Inter-*

national, 493, 70-85. https://doi.org/10.1016/j.quaint.2018.06.041. A, E; Collina, C., et al. (2020), Refining the Uluzzian through a new lithic assemblage from Roccia San Sebastiano (Mondragone, southern Italy). *Quaternary International*, 551, 150-168. https://doi.org/10.1016/j.quaint.2020.03.056. A; Oxilia, G., et al. (2022), Direct evidence that late Neanderthal occupation precedes a technological shift in southwestern Italy. *American Journal of Biological Anthropology*, 179(1), 18-30. P, A; Romandini, M., et al. (2023), Late Neanderthal "menu" from northern to southern Italy: freshwater and terrestrial animal resources. *Quaternary Science Reviews* 315, 108233. P, Z; Silvestrini, S., et al. (2022), Integrating ZooMS and zooarchaeology: new data from the Uluzzian levels of Uluzzo C Rock Shelter, Roccia San Sebastiano cave and Riparo del Broion. *PLoS ONE*, 17(10), e0275614. A, Z; Silvestrini, S., et al. (2024), Hunting game: New data on the subsistence strategies during the Uluzzian in Italy. *Journal of Archaeological Science: Reports*, 57, 104575. A, Z

Code data collected by: Jean-Luc Voisin

1. **ROCHELOT**, Grotte de Rochelot, Grotte de Saint-Angeau
2. Close to the village of Val de Bonnieure (which, prior to 2018, consisted of three separate villages, including Saint-Amant-de-Bonnieure), Charente, France, 25 km North of Angoulême; 45°51'09"N, 0°16'50" E.
3. Cave emptied at the begining of the 20th century (all remains lost); J.-F. Tournepiche 1985 – 1986 (rescue excavations).
4. Hyena den.
5. No
6. Layer d1.
7.1 Mousterian (about 10 artefacts).
7.2 Not studied
7.3 No
7.4 No
7.5 No
7.6 No
7.7 None
8.1 Not studied
8.2 No
9.1 No
9.2 None
9.3 Biostratigraphy, based on large mammals, MIS 5.
10. 8 humans remains (7 teeth and a humerus) with no catalogue number, could belong to the same individual.
10.1 –
10.2 Adult (teeth size).
10.3 R humerus (ff).
10.4 LC_1; RC_1; RP^3; LP^4; LM_1; LM_2; RM_2 (Tournepiche et al., 1996, Couture et al., 1999).
10.5 Toothpicking grooves on numerous teeth.
11. Musée d'Angoulême, square Girard II, rue Corneille, 16000 Angoulême, France.
12. –
13. –
14.1 No
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No

17. Couture C., et al. (1999), Le néandertalien de Rochelot (Saint-Amand de Bonnieure, Charente). Un cas exceptionnel d'usure en cure-dent. *Bulletins et Mémoires de la Société d'Anthropologie de Paris*, 11 (3-4), 488 (abstract). P; Poisson P., et al. (2002), Contribution à l'étude des sillons subverticaux intéressant des facettes interproximales. Applications aux dents néandertaliennes de Rochelot (Saint-Amant-de-Bonnieure, Charente, France). *Bulletins et Mémoires de la Société d'Anthropologie de Paris*, 14 (1-2), 75-87. https://doi.org/10.4000/bmsap.458. P; Tournepiche J.-F. (1994) Un néandertalien dévoré par des hyènes ? La grotte de Rochelot (Saint-Amand de Bonnieure, Charente). *Paléo*, 6, 319-321. https://doi.org/10.3406/pal.1994.1096. A; Tournepiche J.-F., et al. (1996) Les restes néandertaliens du repaire d'hyènes de la grotte de Rochelot (Saint-Amant-de-Bonnieure, Charente, France). *Comptes rendus de l'Académie des Sciences Série 2a*, 322 (5), 429-435. A, Str, P

Code data collected by: Giulia Marciani, Erica Piccirilli, Marco Peresani, Stefano Benazzi

1. SACCOPASTORE

2. Quarry in locality Saccopastore – outside Rome at the time of the paleontological discoveries, within the outskirts of the city at present – about 3.5 km from the Aurelian Walls (Porta Pia), on the left bank of the River Aniene, Italy; 41°57' N, 12°32' E.

3. V. Casorri and Mr Giovannini, April 1929 (discovery of Saccopastore 1); A.C. Blanc and H. Breuil, 16 July 1935 (discovery of Saccopastore 2).

4. Fluvial deposits, mainly composed by gravels and sands, forming the lowest terrace of the River Aniene (see also Koppel, 1934; Sergi, 1934; Blanc, 1948; Segre, 1983).

5. No

6. Saccopastore 1: contact between levels 5 and 6, about 15 m asl; Saccopastore 2: contact between levels 6 and 7, about 18 m asl (see also Koppel, 1934; Sergi, 1934; Blanc, 1948; Segre, 1983).

7.1 Mousterian (Blanc, 1939; Bietti, 1983).

7.2 Pontinian (Blanc, 1939; Bietti, 1983).

7.3 No

7.4 No

7.5 No

7.6 No

7.7 No

8.1 Large mammals, molluscs in level 5 (Saccopastore 1) (Segre, 1948, 1983; Sergi et al., 1971).

8.2 No

9.1 No

9.2 No

9.3 Riss-Würm based on stratigraphic and faunal evidence (Sergi, 1929; Blanc, 1935; Segre, 1948), with particular reference to about 120-130 ka (Segre, 1983).

10. Saccopastore 1, Saccopastore 2.

10.1 Saccopastore 1: female (general morphology and discrete features, dimensions); Saccopastore 2: male (general morphology and discrete features, dimensions).

10.2 Saccopastore 1: adult (suture closure on the cranial vault, dental wear); Saccopastore 2: adult (dental wear).

10.3 Saccopastore 1: cranium (d), includes RM^2, RM^3, LM^1, LM^2, LM^3; Saccopastore 2: incomplete cranium, including great part of the face and elements of the base (right side) (d), includes RC^1, RP^3, RP^4, RM^1, RM^2, RM^3, LC^1, LP^4, LM^1, LM^2, LM^3.

10.4 No free teeth.

10.5 –

11. Museo di Antropologia "G. Sergi", Dipartimento di Biologia Animale e dell'Uomo, Università di Roma "La Sapienza", P.le Aldo Moro 5, 00185 Roma, Italy.

12. Museo di Antropologia "G. Sergi", Dipartimento di Biologia Animale e dell'Uomo, Università di Roma "La Sapienza", P.le Aldo Moro 5, 00185 Roma, Italy.

13. –

14.1 –

14.2 –

14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No
17. Bietti, A. (1983), I processi culturali dalla fine del Riss al Wurm antico nella bassa valle dell'Aniene e più in generale nel Lazio. *Rivista di Antropologia*, suppl. vol. 62: 123-132. A; Blanc, A.C. (1935), Saccopastore II e i terrazzi del Tevere*. Memorie dell'Istituto Italiano di Paleontologia Umana*, 1: 3-14. A; Blanc, A.C. (1939), Il giacimento musteriano di Saccopastore nel quadro del Pleistocene laziale. *Rivista di Antropologia*, 32: 223-236. A; aBlanc, A.C. (1948), Notizie sui ritrovamenti e sul giacimento di Saccopastore e sulla sua posizione nel Pleistocene laziale. *Paleontographia Italica*, 42: 3-23. A; Condemi, S. (1992) *Les Hommes Fossiles de Saccopastore et leurs Relations Phylogénétiques.* Paris: CNRS. P; Koppel, R. (1934), Stratigrafia e analisi della cava di Saccopastore e della regione circostante in riguardo alla posizione del cranio neandertaliano scoperto nel maggio, 1929. *Rivista di Antropologia*, 30: 475-476. A, Str; Manzi, G., Passarello, P. (1991), Anténéandertaliens et Néandertaliens du Latium (Italie Centrale). *L'Anthropologie*, 95: 501-522. P; Manzi, G., et al. (2001), CT-scanning and virtual reproduction of the Saccopastore Neandertal crania. *Rivista di Antropologia*, 79: 61-72. P; Segre, A.G. (1948), Sulla stratigrafia dell'antica cava di Saccopastore presso Roma. *Rendiconti dell'Accademia Nazionale dei Lincei*, 345: 743-751. A, Str; Segre, A.G. (1983), Geologia quaternaria e Paleolitico nella bassa valle dell'Aniene, Roma. *Rivista di Antropologia*, suppl. vol. 62: 87-98. A, E; Sergi, S. (1929), La scoperta di un cranio del tipo di Neanderthal presso Roma. *Rivista di Antropologia*, 28: 457-462. P; Sergi, S. (1934), Sulla stratigrafia di Saccopastore. Appendice alla nota del Prof. Koppel. *Rivista di Antropologia*, 30: 477-478. A, Str; Sergi, S. (1944), Craniometria e craniografia del primo paleantropo di Saccopastore. *Ricerche di Morfologia*, 20-21: 733-791. P; Sergi, S. (1948a), Il cranio del secondo paleantropo di Saccopastore. *Paleontographia Italica*, 42: 25-164. P; Sergi, S. (1948b), The palaeanthropi in Italy: the fossil men of Saccopastore and Circeo. *Man*, 48: 61-64, 76-79. P; Sergi, S., et al. (1971), Italy. In K.P. Oakley, B.G. Campbell & T. Molleson (Eds), *Catalogue of Fossil Hominids. Part II: Europe*. London: British Museum (Natural History). P

Code data collected by: Jean-Luc Voisin, Pere Gelabert

1. **SAINT-CÉSAIRE**, La Roche à Pierrot
2. Rock shelter close the village of Saint-Césaire, Charente-Maritime, France, 10 km East from Saintes; 45°44'56" N, 0°30'19" W.
3. B. Dubigny 1975 (discovery).
4. Cave deposits.
5. Unclear.
6. Unit EJ, layer EJOP sup – Saint-Césaire 1.
7.1 Châtelperronian.
7.2 Blade.
7.3 No
7.4 No
7.5 No
7.6 Yes
7.7 Fireplaces (different layers of the EG and EJ units, but not in layer EJOP where Saint-Césaire 1 has been found).
8.1 Small and large mammals, fish, birds.
8.2 No
9.1 SP 28 (hominin bone), C14, 36,200 ± 750 yrs BP (OxA- 18099), Hublin et al. 2012.
9.2 Sample 95 (burnt flint), TL, 36.6 ± 5.0 kyr BP, layer EJOP sup, Mercier et al. 1991; Sample 48 (burnt flint), TL, 38.2 ± 5.3 kyr BP, layer EJOP sup, Mercier et al. 1991; Sample 103 (burnt flint), TL, 33.7 ± 5.4, layer EJOP sup, Mercier et al. 1991; Sample 53 (burnt flint), TL, 36.6 ± 4.9 kyr BP, layer EJOP sup, Mercier et al. 1991; Sample 54 (burnt flint), TL, 37.4 ± 5.2 kyr BP, layer EJOP sup, Mercier et al. 1991; Sample 82 (burnt flint), TL, 35.6 ± 4.6 kyr BP, layer EJOP sup, Mercier et al. 1991.
9.3 Stratigraphy using color and rock structures.
10. Saint-Césaire 1 (Pierrette).
10.1 Possibly female (bone robustness).
10.2 Adult (bone formation).
10.3 Saint-Césaire 1; R hemi cranium (f) with all the superior teeth, R hemi mandible (f) with all the inferior teeth; R Clavicle (f), R humerus (ff), L humerus (f), L radius (d), L ulna (d); R femur (ff), L patella (i), R tibia (f), L tibia (ff).
10.4 No free teeth.
10.5 A healed fracture in the cranial vault.
11. Musée d'archéologie nationale de Saint-Germain-en-Laye, Place Charles de Gaulle, 78100 Saint-Germain-en-Laye, France.
12. Musée de l'Homme, 17 Place du Trocadéro, 75016, Paris, France; Paléosite, BP 2, 17770 Saint-Césaire, France; Musée national de Préhistoire, 1, rue du musée, 24620 Les Eyzies, France.
13. –
14.1 No (but see Hubblin et al., 2012).
14.2 –
14.3 –
14.4 –
14.5 –

14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. Yes – $^{13}C/^{12}C$, $^{15}N/^{14}N$, Sr/Ca and Ba/Ca (Bocherens et al. 2005).
16. No
17. Balter, V., et al. (2001), Les Néandertaliens étaient-ils essentiellement carnivores? Résultats préliminaires sur les teneurs en Sr et en Ba de la paléobiocénose mammalienne de Saint-Césaire. *Comptes Rendus de l'Académie des Sciences – Series IIA – Earth and Planetary Science* 332 (1), 59-65. https://doi.org/10.1016/S1251-8050(00)01490-7. S; Bocherens, H., et al. (2005), Isotopic evidence for diet and subsistence pattern of the Saint-Césaire I Neanderthal: review and use of a multi-source mixing model. *Journal of Human Evolution* 49 (1), 71-87. https://doi.org/10.1016/j.jhevol.2005.03.003. S; Dayet, L., et al. (2014), Searching for consistencies in Châtelperronian pigment use, *Journal of Archaeological Science*, 44, 180-193. https://doi.org/10.1016/j.jas.2014.01.032. A; Gravina, B., et al. (2018), No reliable evidence for a Neanderthal-Châtelperronian association at La Roche-à-Pierrot, Saint-Césaire. *Scientific Reports*, 8, n°15134 (12p.). https://doi-org./10.1038/s41598-018-33084-9. A; Hublin, J.-J., et al. (2012), Radiocarbon dates from the Grotte du Renne and Saint-Césaire support a Neanderthal origin for the Châtelperronian. *Proceedings of the National Academy of Sciences (USA)*, 109 (46), 18743-18748. https://doi.org/10.1073/pnas.1212924109. D; Lévêque, F., Vandermeersch, B. (1980), Découverte de restes humains dans un niveau castelperronien à Saint-Césaire (Charente-Maritime). *Comptes Rendus Hebdomadaires des Séances de l'Académie des Sciences de Paris, Série D, Sciences Naturelles*, 291 (2), 187-189. A, Str; Mercier, N., et al. (1991), Thermoluminescence dating of the late Neanderthal remains from Saint-Césaire. *Nature*, 351 (6329), 737-739. https://doi.org/10.1038/351737a0. D; Morin, E. (2004), *Late Pleistocene population interaction in western Europe and modern human origins: new insights based on the faunal remains from Saint-Césaire, Southwestern France*. Ph.D. University of Michigan, Z; Trinkaus, E., et al. (1998), Locomotion and body proportions of the Saint-Césaire 1 Châtelperronian Neandertal. *Proceedings of the National Academy of Sciences (USA)*, 95 (10), 5836-5840, https://doi.org/10.1073/pnas.95.10.5836. P; Trinkaus E., et al. (1999), Long bone shaft robusticity and body proportions of the Saint-Césaire 1 Châtelperronian Neanderthal. *Journal of Archaeological Science*, 26 (7), 753-773. https://doi.org/10.1006/jasc.1998.0345. P; Vandermeersch, B. (1984), A propos de la découverte du squelette néandertalien*. Bulletins et Mémoires de la Société d'anthropologie de Paris*, Série 14, Tome 1 (3), 191-196. https://doi.org/10.3406/bmsap.1984.3932. P, A; Zollikofer, C. P. E., et al. (2002), Evidence for interpersonal violence in the St. Césaire Neanderthal. *Proceedings of the National Academy of Sciences (USA)*, 99 (9): 6444-6448. https://doi.org/10.1073/pnas.082111899 P

Code data collected by: Carolin Röding

1. **SALZGITTER-LEBENSTEDT**, Lebenstedt
2. Niedersachsen, Germany; 52°10'30" N, 10°19'33" E.
3. Kleinschmidt in 1963 amidst archaeological material collected in 1956 by Tode (occipital & R parietal), 1976 left occipital was identified within a museum exhibit.
4. Alluvial/fluvial deposits.
5. No
6. All finds (lithics, fauna, human remains) from the same layer (originally G; in newer descriptions B1) simply labeled "find horizon".
7.1 Mousterian.
7.2 Levallois, blades, flakes.
7.3 Bone, and probably antler (Gaudzinski 1999).
7.4 No
7.5 No
7.6 No
7.7 No
8.1 Large mammals; small mammals; birds; fish; molluscs.
8.2 Yes, pollen from trees (pine, alder, spruce, birch, willow) but majority of pollen from herbs: reconstructed as subarctic steppe/tundra environment (Tode et al. 1953).
9.1 No
9.2 Bone (reindeer, ID 115247), C14, Unit G/B1, 51.12 ± 1.58 ka cal BP; Bone (Equidae ID 115248), C14, Unit G/B1, 55.01 ± 2.57 ka cal BP; Bone (Elephantidae, ID 115249), C14, Unit G/B1, >58 (beyond calibration curve); Bone (reindeer, ID 115250), C14, Unit G/B1, 54.27 ± 2.33 ka cal BP; Bone (reindeer, ID 115251), C14, Unit G/B1, >57 (beyond calibration curve); Bone (reindeer, ID 115252), C14, Unit G/B1, 52.8 ± 1.95 ka cal BP; Bone (reindeer, ID 115253), C14, Unit G/B1, 51.2 ± 1.61 ka cal BP; Bone (reindeer, ID 115254), C14, Unit G/B1, >56 (beyond calibration curve); Bone (reindeer, ID 115255), C14, Unit G/B1, >58 (beyond calibration curve); Bone (reindeer, ID 115256), C14, Unit G/B1, 56.13 ± 2.3 ka cal BP (Ruebens et al. 2023 for all).
9.3 Yes, stratigraphy & fauna: (early) Weichsel-Ice age (probably translates to somewhere between 100-30ka).
10. No catalogue number available, 3 cranial fragments (2 of them refit and the 3rd is probably a match so they are considered to be from 1 individual).
10.1 N/A
10.2 Young adult (based on cranial sutures).
10.3 Occipital bone (f); L and R parietal bone (ff).
10.4 –
10.5 –
11. Human remains: Landesmuseum Braunschweig, Burgpl. 1, 38100 Braunschweig, Germany.
12. –
13. –
14.1 No
14.2 –
14.3 –

14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. Yes (Ruebens et al. 2023).
17. Hublin, J. J. (1984). The fossil man from Salzgitter-Lebenstedt (FRG) and its place in human evolution during the Pleistocene in Europe. *Zeitschrift für Morphologie und Anthropologie* 45-56. P; Kleinschmidt, A. (1962), Die Stratonomie der Fundschichten der paläonthologischen Ausgrabung bei Salzgitter-Lebenstedt. *Mitt. Geol. Staatsinst*. Hamburg 31, 3652-381; Kleinschmidt, A. (1965), Wichtigste Untersuchungsergebnisse der paläotologischen Grabung Salzgitter-Lebenstedt. *Eiszeitalter & Gegenwart Quaternary Science Journal* 16, 257. P; Tode, A., et al. (1953), Die Untersuchung der paläolithischen Freilandstation von Salzgitter-Lebensedt. *Eiszeitalt & Gegenwart Quaternary Science Journal* 36, 144-220. A, Z, E; Hillgruber, F. (2014), Die mittelpaläolithische Fundstelle Salzgitter-Lebenstedt. 56. *Jahrestagung in Braunschweig und Schöningen*, 85. A; Gaudzinski, S. (1999), Middle Palaeolithic bone tools from the open-air site Salzgitter-Lebenstedt (Germany). *Journal of Archaeological Science* 26(2), 125-14. A; Gaudzinski, S., Roebroeks, W. (2000), Adults only. Reindeer hunting at the middle palaeolithic site salzgitter lebenstedt, northern Germany. *Journal of Human Evolution* 38(4), 497-521. Z; Pastoors, A. (2009), Blades? – Thanks, no interest!-Neanderthals in Salzgitter-Lebenstedt: Klingen? – Danke, kein Interesse!–Neanderthaler in Salzgitter-Lebenstedt. *Quartär–Internationales Jahrbuch zur Erforschung des Eiszeitalters und der Steinzeit* 56, 105-118. A, D; Ruebens, K., et al. (2023). Neanderthal subsistence, taphonomy and chronology at Salzgitter-Lebenstedt (Germany): a multifaceted analysis of morphologically unidentifiable bone. *Journal of Quaternary Science* 38(4), 471-487. Z, D

Code data collected by: Giulia Marciani, Erica Piccirilli, Marco Peresani, Stefano Benazzi

1. **SANTA LUCIA SUPERIORE**, Grotta di Santa Lucia Superiore
2. Karstic system of Toirano caves (Liguria, Italy); 44°7’60”N, 8°46’0”E (Kaniewski et al., 2005).
3. C. Tozzi 1963 (excavations).
4. Cave deposit.
5. No
6. Level B (Kaniewski et al., 2005).
7.1 Mousterian.
7.2 Typical Mousterian industry, discoid, slightly Levallois, enriched with scrapers (Cauche, 2007, Kaniewski et al., 2005).
7.3 No
7.4 No
7.5 No
7.6 No
7.7 No
8.1 Large mammals (Valensi and Psathi, 2004).
8.2 *Artemisia, Ephedra, Poaceae* and *Chenopodiaceae, Pinus, Betula, Corylus, Ulmus, Quercus ilex, Olea, Phillyrea* (Kaniewski et al., 2005).
9.1 No
9.2 No
9.3 Relative dating: MIS 4 paleoenvironmental, faunal and stratigraphic association.
10. 2 bone fragments with no catalogue numbers.
10.1 –
10.2 –
10.3 Left femur, foot phalanx (Kaniewski et al., 2005).
10.4 –
10.5 –
11. –
12. –
13. –
14.1 –
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No

17. Bouabdallah, N. (1999), Contribution à l'étude sédimentologique du remplissage de la grotte de Santa Lucia supérieure (Ligurie italienne). *Mémoire de DEA, Muséum National d'Histoire Naturelle de Paris*. A; Cauche, D. (2007), Les cultures moustériennes en Ligurie italienne: analyse du matériel lithique de trois sites en grotte. *L'Anthropologie*, 111(3), 254-289. A; Kaniewski, D., et al. (2005), Santa Lucia supérieure (Toirano, Ligurie): reconstitution locale de la végétation ligure durant le Pléniglaciaire ancien. *Geobios*, 38(3), 353-364. E; Tozzi, C. (1963), Scavi nella grotta di Santa Lucia (Toirano). *Rivista di Studi Liguri*, 28, 221-242. E; Valensi, P., Psathi, E. (2004), Faunal exploitation during the Middle Palaeolithic in south-eastern France and north-western Italy. *International Journal of Osteoarchaeology*, 14(3-4), 256-272. Z

Code data collected by: Francesca Romagnoli, Florent Rivals

1. **SIMA DE LAS PALOMAS**
2. Spain; 37° 47' 59" N, 0° 53' 45" W.
3. J.G., Blanco-Gago and M. Walker, 1991.
4. Cave deposits.
5. No
6. Level 2.
7.1 Mousterian.
7.2 Levallois.
7.3 No
7.4 No
7.5 No
7.6 No
7.7 No
8.1 Large mammals, reptiles.
8.2 Herbaceous, shrubs/tree (pollen analysis, Carrión et al., 2003).
9.1 No
9.2 >40.000 and <60.000 (U-series, TL, 14C; Walker et al., 2012).
9.3 –
10. Hominin teeth, cranial and post-cranial remains (MNI = 9). 13 cranial vault pieces (1 immature), 8 partial mandibles (4 immature), 17 isolated postcranial elements (5 immature), 96 teeth (36 in maxillae or mandibles, 15 deciduous, and 5 partially formed), and 14 partial dental roots (11 in mandibles) (extensive list of all remains can be found in Walker et al. 2008, Trinkaus, 2017).
10.1 SP96- female (size and morphology).
10.2 Assemblage is mostly dominated by adult specimens, although juveniles are present, defined predominantly on teeth wear stages and development (extensive list in Welker et al. 2012).
10.3 Cranial fragments, vertebrae, fibula, ulna, humerus, radius, scapula, femur, rib, pedal phalanx, manual phalanx, cuboid, carpus and metacarpus, pelvic fragments (Welker et al. 2008, Trinkaus 2017).
10.4 A largely complete dentition in the fragmentary maxillae and mandible of Palomas 1, a C_1 to M_2 series preserved in the partial left hemimandible of Palomas 59, broken roots in the Palomas 6 mandible, incompletely formed tooth crowns in the Palomas 7 and 80 immature mandibles, fire-damaged roots and three partial molar crowns in the Palomas 23 mandible, two premolars in the Palomas 68 maxillary fragment, a deciduous molar in the Palomas 88 mandibular fragment, and a large series of isolated deciduous and permanent teeth (extensive list in Walker et al. 2008; Trinkaus, 2017).
10.5 Dental pathologies and postcranial hypertrophy are present (Trinkaus 2017).
11. Museo Arqueológico de Murcia, Av. Alfonso X el Sabio, 7, 30008 Murcia, Spain.
12. –
13. –
14.1 –
14.2 –
14.3 –

14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No
17. Carrión, J.S. et al. (2003), Glacial refugia of temperate, Mediterranean and Ibero-North African flora in south-eastern Spain: new evidence from cave pollen at two Neanderthal man sites, *Global Ecology and Biogeography* 12, 119-129. E., A.; Trinkaus, E., (2017), *The People of Palomas: Neandertals from the Sima de las Palomas del Cabezo Gordo, Southeastern Spain*. Texas and A&M University Press. P.; Walker, M.J., et al. (2008), Late Neandertals in Southeastern Spain: Sima de las Palomas del Cabezo Gordo, Murcia, Spain, *PNAS* 105, 20631-20636. A, P; Walker, M.J., et al. (2010), Neandertal mandibles from the Sima de las Palomas del Cabezo Gordo, Murcia, southeastern Spain, *American Journal of Physical Anthropology* 142, 261-272. P., A; Walker, M.J., et al. (2011), Neandertal postcranial remains from the Sima de las Palomas del Cabezo Gordo, Murcia, southeastern Spain, *American Journal of Physical Anthropology* 144, 505-515. P; Walker, M.J., et al. (2012), The excavation of buried articulated Neanderthal skeletons at Sima de las Palomas (Murcia, SE Spain). *Quaternary International* 259, 7-21. P., A; Walker, M.J., et al. (2014), Sima de las Palomas del Cabezo Gordo (Torre Pacheco, Murcia, España). In: Sala Ramos, R., Carbonell, E., Bermúdez de Castro, J.M., Arsuaga, J.L. (Eds.), *Los cazadores recolectores del Pleistoceno y del Holoceno en Iberia y el Estrecho de Gibraltar: estado actual del conocimiento del registro arqueológico*. Universidad de Burgos & Fundación Atapuerca, 404-407. P., A

Code data collected by: Damian Stefański, Mateja Hajdinjak

1. **STAJNIA CAVE**
2. Cave site, southern Poland, close to the town of Częstochowa; 50°36’58” N, 19°29’04” E.
3. M. Urbanowski 2007.
4. Cave deposits.
5. No
6. Series D, layer D2 (in Urbanowski et al. (2019), the layer is described as D1 and consistently as D1B; possible redeposition).
7.1 Late Micoquian.
7.2 Levallois, Discoidal, Bifacial, Other.
7.3 No
7.4 No
7.5 No
7.6 No
7.7 Features. S5000 and S4300 were found inside “structure X2”; layer D2B.
8.1 Large mammals, small mammals, birds.
8.2 Herbaceous, shrubs/tree based on pollen analysis (Żarski et al 2017).
9.1 S5000 (C14): MAMS-40506, 22480 ± 70 BP (underestimate due to contamination of modern carbon)(Picin et al. 2020).
9.2 Sample W1400, U/Th, layer D2B, 52 +19 – 17 ka BP; Sample W1417, U/Th, layer D2B, 52 +5 – 2 ka BP (Żarski et al. 2017 for both).
9.3 MIS 3 geology, archaeology, MIS5a (paleogenomics).
10. Stajnia S5000, S4300, S4619.
10.1 –
10.2 S5000: 20 years (the degree of abrasion on the occlusal surface of the crown, Urbanowski et al. 2010); S4300: 17/18 years (if M_1) or 23/24 years (if M_2); S4619: 6,5 years (Nowaczewska et al. 2013).
10.3 –
10.4 S5000: RM^2; S4300: LM_x; S4619: RM^x.
10.5 S5000: toothpick grooves.
11. Państwowe Muzeum Archeologiczne, Długa 52, 00-241 Warszawa, Poland.
12. –
13. –
14.1 S5000, S16455, S19415 – teeth.
14.2 S5000, S16455, S19415.
14.3 Ancient DNA libraries published in Picin et al, 2020 and Nowaczewska et al, 2021 are stored at the Max Planck Institute for Evolutionary Anthropology (MPI EVA), Leipzig, Germany.
14.4 ENA: PRJEB39529, GenBank: MT795654.
14.5 Mitochondrial DNA capture data.
14.6 UDG treatment: None.
14.7 Genomic coverage: shotgun – some small PCR amplicons from Urbanowski et al, 2010.
14.8 Capture coverage: nuclear – none.
14.9 M for S5000? Based on the small PCR amplicons from Urbanowski et al, 2010.

14.10 –

15. No

16. No

17. Dąbrowski, P. et al. (2013), A Neanderthal lower molar from Stajnia Cave, Poland. *HOMO* 64: 89-103. P, A, E; Nowaczewska, W. et al. (2013), The tooth of a Neanderthal child from Stajnia Cave, Poland. *Journal of Human Evolution* 64: 225-231. P, A, E, G; Picin, A. et al. (2020), New perspectives on Neanderthal dispersal and turnover from Stajnia Cave (Poland). *Scientific Reports* 10: 14778. G; Urbanowski et al. (2010), The first Neanderthal tooth found North of the Carpathian Mountains. *Naturwissenschaften* 97: 411-415. G. P, A, E; Żarski, M. et al. (2017), Stratigraphy and palaeoenvironment of Stajnia Cave (southern Poland) with regard to habitation of the site by Neanderthals. *Geological Quarterly* 61: 350-369. A, E

Code data collected by: Zsolt Mester, Tamás Hajdu

1. **SUBALYUK**, Suba-lyuk, Mussolini-barlang, Mussolini-Höhle, Subalyuk-barlang, Suba-lyuk barlang, grotte Subalyuk, Subalyuk Cave

2. Hungary, Borsod-Abaúj-Zemplén County, Cserépfalu; 47°57’39.6”N, 20°31’49.9”E.

3. J. Dancza, O. Kadić (excavation), L. Bartucz (anthropological study), 27/04/1932-03/05/1932 (discovery of the human remains by János Dancza).

4. Cave deposits.

5. Unclear. Subalyuk 1 (adult) was not buried, the body may be decomposed on the cave floor. Subalyuk 2 (child) was probably buried.

6. Layer 11.

7.1 Quina type Mousterian (layers 7 to 14), typical Mousterian (layers 1 to 6).

7.2 Not analysed in detail, presence of Levallois, Discoid and Quina.

7.3 No

7.4 No

7.5 No

7.6 No

7.7 Charcoal and burned bones in layer 5, big fireplace (?) in layer 11 above the level of human remains.

8.1 Large mammals, small mammals, birds.

8.2 Shrubs and trees (determined from charcoals, dominantly coniferous species).

9.1 Subalyuk 1 (MAMS 16562), C14, 34,177 ± 159 ka BP; Subalyuk 2 (MAMS 25051), C14, 31,370 ± 140 ka BP (Mester et al. 2024 for both).

9.2 –

9.3 Based on climatic interpretation of the stratigraphic sequence (Á. Ringer), layers 7 to 12 correlates to the Lower Pleniglacial (MIS 4). Based on vertebrate chronostratigraphy of Hungary (D. Jánossy), the fauna of layers 10 to 16 represents the Subalyuk stage of the Lower Würm (MIS 4). Based on micromammals (L. Kordos), layer 11 correlates to Lagurus-horizon (MIS 4). Based on anthracological data (J. Stieber), the layer 11 was deposited under cold and continental climate (Larix-Picea and Pinus cembra). Based on archaeozoological analysis and environmental reconstruction (M. Patou-Mathis), layers 7 to 13 cover MIS 4 stage.

10. Subalyuk 1, Subalyuk 2

10.1 Subalyuk 1: female (tooth size and the symphyseal body thickness, Bartucz 1938; but see Pap et al. 1996).

10.2 Subalyuk 1: adult, 40-50 years (based modern dental attrition, Bartucz 1938)/ 25-35 years (based on mandibular teeth and manubrium sterni, Pap et al. 1996); Subalyuk 2: juvenile, 6-7 years (Bartucz 1938)/ 3-4 years (Thoma 1963)/ around 3 years (based on teeth development, Pap et al. 1996).

10.3 Subalyuk 1 (Bartucz 1938, Pap et al. 1996, Pálfi et al. 2023) – inventory numbers are 68.140.1-15.): incomplete mandible (inv.no: 68.140.2.) (d), the manubrium sterni (68.140.8.) (i), the atlas (C1) (f) and three vertebral bodies (68.140.3., 68.140.11, 68.140.15.) (f), one spinous process of a thoracic vertebra (68.140.6.) (i), sacrum (68.140.1.) (d), the left patella (68.140.7.) (i), three metatarsals (left second (f) and right second (68.140.9.) (i), left fourth (68.140.10.)(i)), second left metacarpal (68.140.4.) (f); a fragment of left proximal phalanx (68.140.13-14.).

Subalyuk 2 (Bartucz 1938, Pap et al. 1996, Pálfi et al. 2023) – inventory numbers are 68.146.1-5.): an incomplete cranium (basis not represented) (68.146.1) (d), isolated cranial fragments (68.146.2.), two maxillae (68.146.1) (i), two isolated teeth (68.146.4.) (i), a left nasal bone (68.146.1) (i), a few vertebral bodies.(68.146.3.)(f) and long bone fragments (68.146.5.) (ff).

10.4 Subalyuk 1: R- I_1, I_2, C_1, P_3; L- I_1, I_2, C_1, P_4, M_1, M_2, M_3 (all in mandible, but see remarks). Subalyuk 2: R- dI^1, dI^2, dC^1, dM^1, dM^2, M^1 (germ); L- dC^1, dM^1, dM^2, M^1 (germ).

10.5 Subalyuk 1: early-stage *sacroiliitis*, infectious osseous remodelling on several vertebral bodies (Pálfi et al. 2023), tuberculosis (Lee et al. 2023); Subalyuk 2: pathological lesions on the endocranial surface (Pálfi et al. 2023), tuberculosis (Lee et al. 2023).

11. Department of Anthropology, Hungarian Natural History Museum, Ludovika tér 2-6., 1083 Budapest, Hungary.

12. Department of Anthropology, Hungarian Natural History Museum, Ludovika tér 2-6., 1083 Budapest, Hungary; Department of Biological Anthropology, Eötvös Loránd University, Pázmány Péter sétány 1/c, 1117, Budapest, Hungary.

13. –

14.1 –

14.2 –

14.3 –

14.4 –

14.5 –

14.6 –

14.7 –

14.8 –

14.9 –

14.10 –

15. No

16. No

17. Arensburg, B., et al. (1996), The Subalyuk 2 Middle Ear Stapes. *International Journal of Osteoarchaeology* 6, 185–188. P; Bartucz, L., et al. (1938), *A cserépfalui Mussolini-barlang (Subalyuk)*. Geologica Hungarica Series Palaeontologica 14, Budapest: Magyar királyi Földtani Intézet. P,A,R,Z,E; Bartucz, L., et al. (1940), *Die Mussolini-Höhle (Subalyuk) bei Cserépfalu*. Geologica Hungarica Series Palaeontologica 14, Budapest: Editio Instituti Regii Hungarici Geologici. P,A,R,Z,E; Biró, K. T., Simán, K. (1999), Pleistocene palaeoanthropological remains in Hungary. *Antaeus* 24, 73-77. A; Coqueugniot, H., et al. (2014), Contribution of virtual 3D reconstruction and printing (VIRCOPAL®) to paleoanthropology: The case of the Neanderthal Subalyuk 2 child skull (Bukk Mountains, Hungary). *American Journal of Physical Anthropology* 153 S58, 97. P ; Gábori, M. (1976), *Les civilisations du Paléolithique moyen entre les Alpes et l'Oural. Esquisse historique*. Budapest: Akadémiai Kiadó. A,E; Gábori, M., Gábori-Csánk, V. (1977), The ecology of the Hungarian Middle Palaeolithic. *Földrajzi Közlemények* 101(1-3), 175-182. A,E; Jánossy, D. (1960), Wirbeltierkleinfauna aus dem Mousterienschichten der Subalyuk-Höhle (NO-Ungarn). In: Musil, R. (Ed.), *Mammalia Pleistocaenica*. Supplement Anthropos, Brno: Krajské Nakladatelství, 71-76. Z; Jánossy, D. (1979), *A magyarországi pleisztocén tagolása gerinces faunák alapján.* Budapest: Akadémiai Kiadó. Z,E;vJánossy, D. (1986), *Pleistocene vertebrate faunas of Hungary*. Developments

in Palaeontology and Stratigraphy 8, Amsterdam-Oxford-New York-Tokyo: Elsevier. Z,E; Kordos, L., Ringer, Á. (1991), A magyarországi felső-pleisztocén Arvicolidae-sztratigráfiájának klimato- és archeosztratigráfiai korrelációja (Climatostratigraphic and archeostratigraphic correlation of Arvicolidae stratigraphy of the Late Pleistocene in Hungary). *A Magyar Állami Földtani Intézet Évi Jelentése az 1989. évről*, 523–534. E,Z,A; Lee, O. et al. (2023), Sensitive lipid biomarker detection for tuberculosis in late Neanderthal skeletons from Subalyuk Cave, Hungary. *Tuberculosis* 143, Supplement, 102420. https://doi.org/10.1016/j.tube.2023.102420 P; Mester, Zs. (1989), A Subalyuk-barlang középső paleolitikus iparainak újraértékelése (La réévaluation des industries du Paléolithique moyen de la grotte Subalyuk). *Folia Archaeologica* 40, 11-35. A; Mester, Zs. (1990), La transition vers le Paléolithique supérieur des industries moustériennes de la montagne de Bükk (Hongrie). In: Farizy, C. (Ed.), *Paléolithique moyen récent et Paléolithique supérieur ancien en Europe. Ruptures et transitions : examen critique des documents archéologiques. Actes du Colloque international de Nemours 9-10-11 Mai 1988.* Mémoires du Musée de Préhistoire d'Île de France 3, Nemours: Ed. A.P.R.A.I.F., 111-113. A; Mester, Zs. (2004), Technologie des industries moustériennes de la grotte Suba-lyuk (Hongrie). In: Le Secrétariat du Congrès (Ed.), *Actes du XIVe Congrès UISPP, Université de Liège, Belgique, 2-8 septembre 2001. Section 5: Le Paléolithique moyen: Sessions générales et posters*. British Archaeological Reports International Series 1239, Oxford: Archaeopress, 127-133. A,R; Mester, Zs. (2004), Újabb megfontolások a suba-lyuki neandervölgyi temetkezés kérdéséhez (Nouvelles considérations sur les sépultures néandertaliennes de la grotte Suba-lyuk). In: Ilon, G. (szerk.), *ΜΩΜΟΣ III. – Őskoros Kutatók III. Összejövetelének konferenciakötete – Halottkultusz és temetkezés*. Szombathely: Kulturális Örökségvédelmi Szakszolgálat– Vas megyei Múzeumok Igazgatósága, 309-321. A,P; Mester, Zs. (2008), A Suba-lyuk vadászai: két kultúra, két világ (The hunters of Suba-lyuk: two cultures, two worlds). In: Baráz, Cs. (szerk), *A Suba-lyuk barlang. Neandervölgyi ősember a Bükkben (Suba-lyuk Cave. The neanderthal man in the Bükk)*. Eger: Bükki Nemzeti Park Igazgítóság, 85-98. A,R,E; Mester, Zs. (2022), Certains aspects du Moustérien en Hongrie : Contribution au débat sur la variabilité. In: Cîrstina, O., Niţu, E.-C. (Eds.), *O viaţă dedicată paleoliticului: studii in honorem Marin Cârciumaru / A life dedicated to the paleolithic: studies in honorem Marin Cârciumaru*. Târgovişte: Cetatea de scaun, 31-52. A; Mester, Zs., Patou-Mathis, M. (2016), Nouvelle interprétation des occupations néanderthaliennes de la grotte Subalyuk (Hongrie du Nord). *Acta Archaeologica Carpathica* 51, 7-46. Z,E,A; Mester, Zs. et al. (2024), First direct dating of the Late Neanderthal remains from Subalyuk Cave in Northern Hungary. *Anthropologischer Anzeiger*, 81(2), 169-181. https://doi.org/10.1127/anthranz/2023/1716 P, A, D; Pálfi, Gy., et al. (2023), Re-examination of the Subalyuk Neanderthal remains uncovers signs of probable TB infection (Subalyuk Cave, Hungary). *Tuberculosis* 143, 102419. https://doi.org/10.1016/j.tube.2023.102419 P; Pap, I., et al. (1995), First scanning Electron Microscope Analysis of Dental Calculus from European Neanderthals: Subalyuk (Middle Paleolithic, Hungary). Preliminary report*. Bulletins et Mémoires de la Société d'Anthropologie de Paris* 7, 69-72. https://doi.org/10.3406/bmsap.1995.2409 P; Pap, I., et al. (1996), The Subalyuk Neanderthal remains (Hungary): a re-examination. *Annales historico-naturales Musei nationalis hungarici* 88, 233-270. P; Szabó, J. (1935), L'homme moustérien de la grotte Mussolini (Hongrie). Etude de la man-

dibule*. Bulletins et Mémoires de la Société d'Anthropologie de Paris* 6/1-3, 22-30. P; Thoma, A. (1963), The dentition of the Subalyuk Neanderthal child. *Zeitschrift für Morphologie und Anthropologie* 54, 127-150. https://www.jstor.org/stable/25754835 P; Tillier, A-M. (2011), Facts and Ideas in Palaeolithic Growth Studies (Paleauxology). Evidence from Neanderthals in Europe. In: Condemi, S., Weniger, G.-C. (Eds.), *Continuity and Discontinuity in the Peopling of Europe. One Hundred Fifty Years of Neanderthal Study*. Vertebrate Paleobiology and Paleoanthropology, Dordrecht: Springer, 139-154. https://doi.org/10.1007/978-94-007-0492-3_12 P; Tillier, A.-M., et al. (2003), A propos des Néanderthaliens tardifs du sud-est de l'Europe centrale: l'exemple des enfants de Subalyuk et Sipka. In: Bruzek, J., Vandermeersch, B., Garralda, M. D. (dir.), *Changements biologiques et culturels de la fin du Paléolithique moyen au Néolithique*. *Actes du Colloque en hommage à J. Jelinek.* Talence, 87-98. P; Tillier, A.-M., et al. (2006), The Middle-Upper Palaeolithic transition in Hungary: an anthropological perspective. In: Cabrera-Valdés, V., Bernaldo de Quirós Guidotti, F., Maíllo Fernández, J. M. (eds.), *En el centenario de la Cueva de El Castillo: el ocaso de los Neandertales*. Madrid: Centro Asociado a la Universidad Nacional de Educación a Distancia en Cantabria, 89-106. P, A; Vértes, L. (1965), *Az őskőkor és az átmeneti kőkor emlékei Magyarországon*. Magyar Régészet Kézikönyve 1, Budapest: Akadémiai Kiadó. A, E

18. The isolated Subalyuk 1 teeth RM_1, RM_2 and RM_3 (inventory no.s: 68.140.12.) were investigated by Bartucz (1938) and Szabó (1935) but not by Pap et al. (1996), these 3 teeth are missing from the collection. There is a cast of them in the collection of the Török Aurél Collection of the Departmant of Biological Anthrology at Eötvös Loránd University.

Code data collected by: Adrián Nemergut, Ľubomíra Kaminská

1. **ŠAĽA**
2. Slovakia, Šaľa county, Unknown exact geographical position.
3. V. Čerňanský 1961(survey), I. Mihálik – 1993 (survey), Z. Vozák – 1995 (survey).
4. Secondary position in gravel layers of Váh river.
5. No
6. No information, surface find.
7.1 No
7.2 No
7.3 No
7.4 No
7.5 No
7.6 No
7.7 No
8.1 Large mammals.
8.2 No
9.1 Šaľa 1, Šal'a 2 – Amino acid hydroxyproline dating. Sample OxA-X-2731-15, surface layer: > 44.8 ka BP; Sample OxA-X-2731-15, surface layer: > 45.1 ka BP (Hopkins et al. 2022 for both).
9.2 –
9.3 –
10. Šal'a 1, Šal'a 2.
10.1 Šal'a 1: probably female (morphology); Šal'a 2: probably male.
10.2 Šal'a 1: adult (20-39 years), Šal'a 2: mature (40-59 years).
10.3 Šal'a 1: the frontal bone – *os frontale* (f); Šal'a 2: two cranial fragments (left parietal and left half of frontal bone) (f).
10.4 –
10.5 Šal'a 1: An elliptical depression is visible in the area of the right supraorbital plane — a scar measuring about 10x12 mm. It penetrates the entire thickness of the external lamina and creates a shallow defect in the diploë (Sládek et al. 2002; Vlček 1968). The walls of the disruption show newly formed bone, while the area around the scar is highly atrophied and the torus supraorbitalis is locally thinned. It may be a healed wound from a penetrating trauma caused by a sharp object (e.g., stone, tooth).
Šal'a 2: The frontal bone of Šal'a II was split along the sutura frontale and the frontal tuber shows some erosion. The parietal bone showed two flat areas, one between the parietal eminence and the sagittal suture, the other between the parietal eminence and the lambdoid suture. They could have been caused by injury or taphonomic processes. As the scratches do not differ in color, a healed wound is more likely. While the inside of the cranial fragment is intact, there is a shallow impression which may stem from an epidural hematoma.
11. Slovenské národné múzeum – Prírodovedné múzeum, Vajanského nábrežie 2, 810 06 Bratislava, Slovak Republic
12. –
13. –
14.1 –

14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No
17. Hopkins, R. J. A. et al. (2022), Single amino acid radiocarbon dating of two Neanderthals found at Šaľa (Slovakia). *Radiocarbon* 64(1):87-100. doi:10.1017/RDC.2021.113 P, D; Vlček, E. (1969), *Neandertaler der Tschechoslovakei*, Academia Prag. P; Sládek, V., et al. (2002), Morphological affinities of the Šaľa 1 frontal bone. *Journal of Human Evolution*, 43, 787-815. P; Šefčáková, A., et al. (2005) Príspevok k histórii, stratigrafii a datovaniu neandertálca Šaľa 1 zo Slovenska (Contribution to the history, stratigraphy and dating of the Neandertal specimen Šaľa 1 from Slovakia). *Acta Rerum Naturalium Musei Nationalis Slovaci* 51, 71-87. P; Stansfield, E., et al (2011), Podkumok calvariae: possible Upper Paleolithic hominins from European Russia. *Journal of Human Evolution* 60, 129-144. (Šaľa 1 is in the compared database). P; Šefčáková, A. (2017), Neandertaler Šaľa 1 – ein Mensch des oberen Pleistozän aus der Slowakei. In: H. Meller, T. Puttkammer (Eds.): *Klimagewalten. Treibende Kraft der Evolution*. Begleitband zur Sonderausstellung, Landesmuseum für Vorgeschichte, Theiss Verlag, Halle (Saale), 280-281, 447. P; Jakab, J., (2005), Šaľa II: Documentation and description of a Homo sapiens neanderthalensis find from Slovakia. *Anthropologie*, XLIII (2-3): 325-330. P

Code data collected by: Petr Škrdla

1. **ŠIPKA CAVE**
2. Czech Republic, Central Moravia, Moravian Gate, Štramberk, 49°35’14” N, 18°7’9” E.
3. K. J. Maška 1979 – 1883; F. Prošek 1950.
4. Cave deposits.
5. No
6. Early Würmian, PK II.
7.1 Moustérian.
7.2 Laminar/blade, Expedient/flake, Bifacial.
7.3 No
7.4 No
7.5 No
7.6 No
7.7 No
8.1 Large mammal, small mammal.
8.2 No
9.1 No
9.2 No
9.3 No
10. Šipka 1, mandibular symphysis fragment.
10.1 Possibly male according to Minugh-Purvis (2000).
10.2 9-12 years, based on tooth development.
10.3 Destroyed in 1945, available only as a cast.
10.4 LI_2, RI^1 and unerupted C, RP_3, and P_4 germs.
10.5 No
11. Original remains destroyed in 1945.
12. Moravian Museum, Zelný trh 6, 659 37 Brno, Czech Republic.
13. No
14.1 No
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No
17. Maška, K.J. (1882), Über den diluvialen Menschen in Stramberg“. In: Mitteilungen der Anthropologischen Gesellschaft in Wien XII, 32-38. A; Jelínek J. (1965), Der Kiefer aus der Šipkahöhle. *Anthropos 17* (N.S. 9): 135-179. Brno. P; Vlček, E. 1958: Die Reste des Neanderthalmenschen aus dem Gebiete der Tschechoslowakei. In. G.H.R. von Koenigswald, ed., *Hundert Jahre Neanderthaler, Neanderthal centenary* 1856 –

1956: Gedenkbuch der Internationalen Neanderthal Feier, Düsseldorf, 26-30 August 1956, 107-120, Utrecht: Kemink. P; Valoch, K. (1965), Jeskyně Šipka a Čertova díra u Štramberku. *Anthropos: studies in anthropology, palaeoethnology, palaeontology and quaternary geology* 17 (N.S. 9), Moravské muzeum v Brně – Ústav Anthropos, Brno A; Minugh-Purvis, N, (2000), Ontogeny and Morphology of the child's mandible from Šipka – Moravia, Czech Republic. *Anthropologie* 38 (1), 71-82. P

Code data collected by: Petr Škrdla

1. **ŠVÉDŮV STŮL CAVE**, Ochos Höhle, Ochoz Cave, Schwedentischgrotte
2. Czech Republic, Moravian karst (southern part), Ochoz u Brna, 49°14'43" N, 16°44'52" E.
3. K. Kubasek 1905, B. Klíma 1953 – 1955, J. Vaňura 1964, P. Škrdla et al. 2019 – 2024.
4. Cave deposits.
5. No
6. Early Würmian.
7.1 Mousterian.
7.2 Laminar/blade, Expedient/flake, Bifacial.
7.3 No
7.4 No
7.5 No
7.6 No
7.7 No
8.1 Large mammal, small mammal.
8.2 No
9.1 No
9.2 No. There are several dates (14C, OSL – unpublished) from the cave sediments but their association to human remains is unknown.
9.3 No
10. One mandible fragment (known as Ochoz Neandertal mandible, Mlenjek et al. 2024), and two isolated teeth, without catalogue numbers.
10.1 –
10.2 Mandible: adult (teeth wear); molar: adult, around 35 years (stage of abrasion).
10.3 Mandible: fragment with the lower part of the body and both arms broken off, the left arm being broken behind the third molar and the right arm behind the second molar, leaving the third molar missing, the rest of the teeth are present (f).
10.4 RM_3 and I2 (Mlenjek et al. 2024).
10.5 –
11. Moravian Museum, Zelný trh 6, 659 37 Brno, Czech Republic.
12. –
13. No
14.1 No
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No

17. Rzehak, A. (1906), Der Unterkiefer von Ochos. Ein Beitrag zur Kenntnis des Altdiuvialen Menschen. Verhandlungen des Naturforsch. *Vereines in Brünn* XLIV, 91-114. Available also from: https://www.biodiversitylibrary.org/item/141370#page/9/mode/1up. P; Klíma, B. (1962), Die archäologische Erforschung der Höhle "Švédův Stůl" in Mähren. In: R. Musil (ed.): *Die archäologische Erforschung der Höhle "Švédův Stůl" 1953 – 1955.* Anthropos 13, N. S. 5. Brno: Krajské nakladatelství v Brně, 7-96. A; Vlček, E. (1958), Die Reste des Neanderthalmenschen aus dem Gebiete der Tschechoslowakei. In. G.H.R. von Koenigswald, ed., *Hundert Jahre Neanderthaler, Neanderthal centenary, 1856 – 1956: Gedenkbuch der Internationalen Neanderthal Feier*, Düsseldorf, 26-30 August 1956, 107-120, Utrecht: Kemink. P; Mlejnek, O., et al. (2024), Přehled výzkumů 65/1, 11-37, https://doi.org/10.47382/pv0651-01 A; Jelínek, J. (1962), Der Unterkiefer von Ochoz. In: R. Musil (ed.): *Die archäologische Erforschung der Höhle "Švédův Stůl" 1953 – 1955*. Anthropos 13, N. S. 5. Brno: Krajské nakladatelství v Brně, 261-284. P

18. There are additional bone fragments found in Vaňuras excavations in the 60s, but it is not clear whether they are hominin or not, for details see Mlejnek et al. 2024.

Code data collected by: Ron Shimelmitz

1. **TABUN CAVE**, Et Tabun
2. The Nahal Me'arot Nature Reserve at Mount Carmel, Israel; UNESCO World Heritage Site; 32.°40'12" N, 34°57'36" E.
3. Discovered in 1928 due to stone quarrying attempt for the building of Haifa harbor; D. Garrod 1929-1934 (excavations); human remains studied and published by McCown and Keith 1939. Later excavations byA. Jelinek 1967-1971 (excavations), A. Ronen 1975 – 2003 (excavations). R. Shimelmitz, M. Weinstein-Evron and I. Hershkovitz (currently).
4. Cave deposits.
5. Yes: Tabun C1 (Neanderthal woman burial).
6. The stratigraphic location of the Tabun C1 burial is not clear; debated whether affiliated with Layer B or C (Garrod and Bate 1937; Bar-Yosef and Callander 1999). For Layer C stratigraphy see Friesem et al. 2020.

7.1 Mousterian.

7.2 Tabun B: Levallois; unclear; Tabun C; Unit I: Levallois, expedient; Tabun D; Units IX-II: Levallois, Laminar, expedient.

7.3 No

7.4 Yes – few wood phytoliths are reported from Layer B (Albert et al. 1999).

7.5 No

7.6 No

7.7 Several hearths in Layers B and C (Garrod); none has remained to be examined by modern tools. Burnt lithics are found in extremely high percentages in Layer C (Shimelmitz et al., 2014).

8.1 Large mammals (Garrod and Bate 1937; Marin-Arroyo 2011, 2013), Small mammals (Jelinek et al., 1973; Fried et al. 2024), Birds, Reptiles/Amphibians (Lev et al. 2023).

8.2 No

9.1 Tabun C1, U-Series, 19±2 to 70±25 ka (Schwarcz et al., 1998); ESR-U-Series, 112±29 to 143±37 ka (Grün and Stringer 2000); 170 ± 44 ka (Grün and Stringer 2023). Tabun BC7, ESR-U-Series 90 +30/-16 ka (Coppa et al. 2006).

9.2 Layer B, ESR-U-Series (bovid teeth) 104+33/-18 ka (Grün and Stringer 2000). Layer C, ESR-U-Series (bovid teeth) 135+60/-30 ka (Grün and Stringer 2000); TL (burnt flint; Unit I, Beds 20-21), mean 165±16 ka (Mercier, Valladas 2003); pIRIR290 (sediments; Unit I, Beds 19-22), mean, 196±9 ka (Richard et al. 2024).

9.3 –

10. Tabun C1, Tabun BC7; Several additional human remains from Layers B-C are reported in McCown and Keith 1939 and are attributed to other hominin populations (Tabun C2; Harvati and Lopez 2017; Rak 1998).) or remained unassigned.

10.1 Tabun C1: female (morphology) (McCown and Keith 1939; Tillier 2005).

10.2 Tabun C1: adult (general size and teeth maturation and wear).

10.3 Tabun C1: skull (crushed and reconstructed); mandible (right condyle is missing); vertebrae (3rd-10th); ribs (the 1st and 12th pairs of ribs are missing; the rest are partially represented); L scapula; L clavicula; R clavicula (f); L humerus, R humerus (partial); L radius; R ulna (f); L ulna; L carpus; metacarpals (partial); phalanges (partial); pelvis (missing the sacrum, while the ilium, acetabulum, pubic and ischial ramus are fragmented); R femur (damaged at distal end); L femur (ff); L tibia; R tibia (d); R fibu-

la; L fibula (d); R tarsus; L tarsus (d); metatarsi and phalanges (partial) (McCown and Keith 1939).

10.4 Tabun C1: missing left M3 (McCown and Keith 1939). Tabun BC7: RI^1, RI^2, RM^1, RM^2, RM^3; LM^2, LM^3 (Coppa et al. 2005).

10.5 –

11. Tabun C1; BC7: Natural History Museum, Cromwell Rd, South Kensington, London SW7 5BD, United Kingdom.

12. –

13. –

14.1 No

14.2 –

14.3 –

14.4 –

14.5 –

14.6 –

14.7 –

14.8 –

14.9 –

14.10 –

15. No

16. No

17. Albert, R.M., et al. (1999), Mode of occupation of Tabun Cave, Mt Carmel, Israel during the Mousterian period: a study of the sediments and phytoliths. *Journal of Archaeological Science* 26(10), 1249 – 1260. E; Bar-Yosef, O., Callander, J. (1999), The woman from Tabun: Garrod's doubts in historical perspective. *Journal of Human Evolution* 37, 879-885. A; Coppa, A., et al. (2005), Newly recognized Pleistocene human teeth from Tabun Cave, Israel. *Journal of Human Evolution* 49, 301-315. P; Fried, T., et al. (2024), How robust is the taphonomic method in microvertebrate research? Analytical error evaluation in taphonomic data from hominin-bearing Layer C of Tabun Cave. *Palaeogeography, Palaeoclimatology, Palaeoecology* 112304. Z; Friesem, D.E., et al. (2021), High-resolution study of Middle Palaeolithic deposits and formation processes at Tabun Cave, Israel: Guano-rich cave deposits and detailed stratigraphic appreciation of Layer C. *Quaternary Science Reviews*, 274, p.107203. A; Garrod, D.A.E., Bate, D.M.A. (1937), *The Stone Age of Mount Carmel, Vol. 1: Excavations at the Wadi El-Mughara*. Clarendon Press, Oxford. A; Z; Gisis, I., Ronen, A. (2006), *Bifaces from the Acheulian and Yabrudian layers of Tabun Cave, Israel. Axe Age: Acheulian Tool-Making from Quarry to Discard*, Equinox, Sheffield. A; Grün, R., Stringer, C. (2000), Tabun revisited: revised ESR chronology and new ESR and U-series analyses of dental material from Tabun C1. *Journal of Human Evolution* 39, 601-612. D; Grün, R., Stringer, C. (2023), Direct dating of human fossils and the ever-changing story of human evolution. *Quaternary Science Reviews* 322,108379. D; Harvati, K., Lopez, E.N. (2017), A 3-D look at the Tabun C2 jaw. *Human Paleontology and Prehistory: Contributions in Honor of Yoel Rak*, 203-213. P; Jelinek, A.J. (1981), The Middle Paleolithic in the Southern Levant from the perspective of the Tabun Cave. *Préhistoire du Levant-Chronologie et organisation de l'espace depuis les origine jusqu'au VIe millénaire*, 265-280. A; Jelinek, A.J. (1982), The Tabun

cave and Paleolithic man in the Levant. *Science*, 216(4553), 1369-1375. A; Jelinek, A.J., et al. (1973), New excavations at the Tabun cave, Mount Carmel, Israel, 1967 – 1972: A preliminary report. *Paléorient* 1, 151-183. Z, E; Lev, M., et al. (2023), Paleoenvironments and climate at Nahal Me'arot (Mount Carmel, Israel) during the Middle and Late Pleistocene: The herpetofauna of Tabun Cave and el-Wad Terrace. *Quaternary Science Reviews* 307, p.108060. Z, E; Marín-Arroyo, A.B. (2013), Palaeolithic Human Subsistence in Mount Carmel (Israel). A Taphonomic Assessment of Middle and Early Upper Palaeolithic Faunal Remains from Tabun, Skhul and el-Wad. *International Journal of Osteoarchaeology* 23(3), 254-273. Z; Marín-Arroyo, A.B. (2013), New Opportunities for Previously Excavated Sites: Paleoeconomy as a Human Evolutionary Indicator at Tabun Cave (Israel). In: Clark, J.L., Speth, J.D. (Eds.). *Zooarchaeology and Modern Human Origins. Vertebrate Paleobiology and Paleoanthropology*, Springer, Dordrecht, 59-75. Z; McCown, T.D., Keith, S.A. (1939), *The Stone Age of Mount Carmel. The Fossil Human Remains from the Levalloiso-Mousterian. Volume II.* Oxford University Press, Oxford. P; Mercier, N., Valladas, H. (2003), Reassessment of TL age estimates of burnt flints from the Paleolithic site of Tabun Cave, Israel. *Journal of Human Evolution* 45, 401-409. D; Rak, Y. (1998), Does any Mousterian cave present evidence of two hominid species? In: Akazawa T, Aoki K, Bar-Yosef O, (Eds.), *Neandertals and modern humans in western Asia.* New York: Plenum Publishing, 353-366. P; Richard, M., et al. (2024), Chronology of the late Lower and Middle Palaeolithic at Tabun Cave (Mount Carmel, Israel) with insights into diagenesis and dose rate variation using post-IR IRSL (pIRIR290) dating and infrared spectroscopy. *Quaternary Geochronology*, 101611. D; Rink, W.J., et al. (2004), Confirmation of a near 400 ka age for the Yabrudian industry at Tabun Cave, Israel. *Journal of Archaeological Science* 31, 15-20. D; Tillier, A.M., (2005). The Tabun C1 skeleton: a Levantine neanderthal? *Journal of the Israel Prehistoric Society* 35: 439-450. P

18. Several additional human remains from Layers B-C are reported in McCown and Keith 1939 attributed to other hominin population (Tabun C2; Harvati and Lopez 2017; Rak 1998) or remained unassigned.

Code data collected by: Giulia Marciani, Erica Piccirilli, Marco Peresani, Stefano Benazzi

1. **TADDEO**, Grotta Taddeo
2. Near Marina di Camerota, 7m asl (Salerno, Campania, Italy), 40°00'02" N, 15°22'02" E.
3. A. Vigliardi 1967.
4. Cave deposit (Vigliardi, 1968).
5. No
6. Reddish layer of about 30 cm interposed between a surface speleothem and the Tyrrhenian beach (Vigliardi, 1968).
7.1 Mousterian (Vigliardi, 1968).
7.2 Few pieces, presence of Levallois (Vigliardi, 1968).
7.3 No
7.4 No
7.5 No
7.6 No
7.7 No
8.1 Large mammals (Vigliardi, 1968).
8.2 No
9.1 –
9.2 –
9.3 Early phase of Würm I (MIS 5c or 5d) or a transition phase between Würm I and Würm II (MIS 5a) based on stratigraphic and faunal evidence (Vigliardi, 1968; Benazzi et al. 2011; Palma di Cesnola 2001).
10. Taddeo 1; Taddeo 2, Taddeo 3, Taddeo 4.
10.1 Undetermined.
10.2 Taddeo 1: adult (dental maturation and wear); Taddeo 2: adult (dental maturation and wear); Taddeo 3: adult (dental maturation and wear); Taddeo 4: juvenile, 5-6 years (dental eruption).
10.3 –
10.4 Taddeo 1: LC_1 (Benazzi et al. 2011); Taddeo 2: RP^4 (Benazzi et al., 2011); Taddeo 3: RM^1 (Catalogue of fossils, 2005; Benazzi et al. 2011); Taddeo 4: RM_1 (Catalogue of fossils, 2005; Benazzi et al. 2011).
10.5 –
11. Museo Fiorentino di Preistoria, via S. Egidio 21, 50122 Firenze, Italy.
12. –
13. –
14.1 –
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –

14.10 –
15. No
16. No
17. Benazzi, S., et al. (2011), A reassessment of the Neanderthal teeth from Taddeo cave (southern Italy). *Journal of Human Evolution,* 61(4), 377-387. P; Messeri, P. (1975), Resti umani (denti e parti dell'arto inferiore) provenienti da strati musteriani in grotta a Marina di Camerota (Salerno). *Atti XVII Riunione Scientifica Istituto Italiano di Preistoria e Protostoria*, Firenze: 171-185. P; Messeri, P., Palma di Cesnola, A. (1976), Contemporaneità di paleantropi e fanerantropi sulle coste dell'Italia meridionale. *Zephyrus*, 26-27: 7-30. P, A; Palma di Cesnola, A. (2001), *Il Paleolitico inferiore e medio in Italia*. ed. Millenni. A; Vigliardi, A. (1968), Il Musteriano della Grotta Taddeo (Marina di Camerota, Salerno). *Rivista di Scienze Preistoriche*, 23: 245-259. A

Code data collected by: Giulia Marciani, Erica Piccirilli, Marco Peresani, Stefano Benazzi

1. **TAGLIENTE**, Riparo Tagliente

2. Near Stallavena di Grezzana (Verona, Italy), on the right flank of Valpantena, 250 m asl. 45°35' N, 11°00' E.

3. A. Guerreschi and C. Peretto, 1979 (excavations, Tagliente 3) and 1998 (Tagliente 4).

4. Rockshelter deposit with highly anthropized levels 5. No.

5. –

6. Levels 36 (Tagliente 3) and 37 (Tagliente 4).

7.1 Mousterian (Bartolomei et al., 1982).

7.2 SSDA, Levallois, discoid, presence of a volumetric laminar debitage starting from level 37, retouched assemblage mainly represented by side-scrapers and denticulates made on opportunistic and more rarely on Levallois flakes (Arnaud et al., 2016).

7.3 –

7.4 –

7.5 –

7.6 –

7.7 –

8.1 Large mammals, small mammals.

8.2 Pollens indicate steppe environment and cold dry climate (Bartolomei et al., 1982).

9.1 –

9.2 –

9.3 The faunal assemblage and the sedimentological analysis suggest a chronology spanning between MIS 4 and MIS 3 (Bartolomei et al., 1982).

10. Tagliente 3, Tagliente 4.

10.1 –

10.2 Tagliente 3: juvenile, tooth lost at about 10 years; Tagliente 4: juvenile, tooth lost at about 10 years.

10.3 –

10.4 Tagliente 3: RdM^2; Tagliente 4: RdC^1 (Catalogue of Italian fossils, 2005)/ RdC_1 (Arnaud et al. 2016).

10.5 –

11. Dipartimento di Scienze Geologiche e Paleontologiche, Università di Ferrara, C.so Ercole I d'Este 32, 44100 Ferrara, Italy.

12. Dipartimento di Anatomia Farmacologia e Medicina Legale, Università di Torino, C.so M. d'Azeglio 52, 10126 Torino, Italy.

13. –

14.1 –

14.2 –

14.3 –

14.4 –

14.5 –

14.6 –

14.7 –

14.8 –

14.9 –

14.10 –

15. No

16. No

17. Arnaud, J., et al. (2016), A reexamination of the Middle Paleolithic human remains from Riparo Tagliente, Italy. *Quaternary International*, 425, 437-444. P; Bartolomei, G., et al. (1982), I depositi Würmiani del Riparo Tagliente. *Annali dell'Università di Ferrara*, n.s. 3: 61-105. A; Villa, G., et al. (1999), Neandertal teeth from the Mousterian levels of the Riparo Tagliente (Verona, Italy). In *Abstracts XIII Congresso A.A.I.,* Roma e Sabaudia, 4-8 ottobre, 145. P

18. Tagliente 1 and Tagliente 2 are UPHS and not Neandertals.

Code data collected by: Carolin Röding, Andrew Kandel, Michael Bolus

1. **TAUBACH**

2. Thüringen, Germany; 50°57’21” N, 11°20’60” E.

3. 1871: first stone tools found, 1877: Taubach 1 by H. Sonnrein (?), 1892: Taubach 2 by A. Weiß (?).

4. Alluvial (travertine).

5. No

6. All human remains from “Knochensand”, while fauna and lithics either “Knochen sand” or lower humic sands. “Knochensand” described as below a thin layer (16) of indurated travertine (which could mean layer 17) or apparently used for all sandy travertines underneath the workable, indurated blocky travertine (11), i. e., the mollusc-rich upper part was not always specified as a different deposit”.

7.1 Mousterian.

7.2 Levallois.

7.3 Unclear.

7.4 No

7.5 No

7.6 No

7.7 Combustion features (“Knochensand”).

8.1 Large mammals (“Knochensand”), small mammals (throughout sequence), molluscs (“Knochensand”).

8.2 The lack of leaf and seed impressions in the Taubach travertine indicates an absence of bush and tree Vegetation in the vicinity.

9.1 No

9.2 Yes, of layer above the human fossil layer so ca. 116 ka minimum age and probably MIS 5: T Tau 8, U/Th, Unit 7, 111 ± 12 ka (Brunnacker et al., 1983); T Tau 9, U/Th, Unit 11, 116 ± 19 ka (Brunnacker et al., 1983).

9.3 Yes, based on fauna (micromammals, horse, beaver): Eemian but contested and some species like the horses proposed to be (far) older.

10. Taubach 1 (Taubach A); Taubach 2 (Taubach B).

10.1 N/A

10.2 Taubach 1: 12-14 years old (minimal dental wear). Taubach 2: ca. 9 years old (root resorption, dental wear).

10.3 –

10.4 Taubach 1: LM_1 (probably M_1 but M_2 also an option); Taubach 2: dM_1.

10.5 –

11. Human remains: Thüringisches Landesamt für Archologische Denkmalpflege, Weimar, Germany (früher Museum für Ur- und Frühgeschichte Weimar).

12. –

13. –

14.1 No

14.2 –

14.3 –

14.4 –

14.5 –

14.6 –

14.7 –

14.8 –

14.9 –

14.10 –

15. No

16. No

17. Behm-Blancke, G. (1960), *Altsteinzeitliche Rastplätze im Travertingebiet von Taubach, Weimar, Ehringsdorf. Alt-Thüringen*. Jahresschr. d. Museums f. Ur- und Frühgeschichte Thüringens 4. P, A, Z, E; Bratlund, B. (2000), Taubach revisited. *Jahrbuch des Römisch-Germanischen Zentralmuseums Mainz* 46, 61-174. Z, A; Schäfer, D. (1993), Grundzüge der technologischen Entwicklung und Klassifikation vor-jungpaläolithischer Steinartefakte in Mitteleuropa. *Berichte der Römisch-Germanischen Kommission* Bd. 74, 51 ff. A, R; Götze, A. (1892), Die palaeolithische Fundstelle in Taubach bei Weimar. *Zeitschrift für Ethnologie* 24, 366-377. A; Heinrich, W.-D. (1994), Biostratigraphische Aussagen der Säugetierpaläontologie zur Altersstellung pleistozäner Travertinfundstätten in Thüringen. *Berliner Geowiss.* Abh. E. 13. 251-267. Z; Brunnacker, K. et al. (1983), Radiometrische Untersuchungen zur Datierung mitteleuropäischer Travertinvorkommen. *EAZ: Ethnogr.-Archäol*. Zeitschrift 24, 217-266. D; Steiner, W. (1977), Das geologische Profil des Travertin-Komplexes von Taubach bei Weimar. *Quartärpaläontologie* 2, 83-118. A, E; Nehring, A. (1895), Ueber fossile Menschenzähne aus dem Diluvium von Taubach bei Weimar. *Naturwissenschaftliche Wochenschrift* X, no. 31, 369-372. P

18. Morphology does not give much information about taxonomy but dating seems to fit.

Code data collected by: Florent Rivals, Francesca Romagnoli

1. **TEIXONERES CAVE**, Cova de les Teixoneres
2. Spain; 41°48’16” N, 2°8’57” E.
3. J. de C. Serra Ràfols 1950’s.
4. Cave deposits.
5. No
6. Unit IIIb.
7.1 Mousterian.
7.2 Levallois.
7.3 Yes: bone retouchers.
7.4 No
7.5 No
7.6 No
7.7 Hearths.
8.1 Large mammals, small mammals, birds, reptiles, amphibians.
8.2 Herbaceous, shrubs/trees (from pollen analysis; Ochando et al. 2020).
9.1 No
9.2 Unit IIIb (mammal bones), C14, 45080 to >51000 cal BP (Talamo et al. 2014).
9.3 Unit IIIb = 60-90 ka (micromammals).
10. TX16-O10-344; TX17-N08-177; TX17-M08-342; TX17-L09-166.
10.1 –
10.2 TX16-O10-344: 6-7 years; TX17-N08-177: about 11 years; TX17-M08-342; about 11 years; TX17-L09-166: adult (based on tooth wear).
10.3 –
10.4 TX16-O10-344: Ldl_2 (crown complete + part of the root); TX17-N08-177: LdC_1 (crown complete + part of the root); TX17-M08-342: RdM_2 (complete crown); TX17-L09-166: RM^1 (complete tooth).
10.5 –
11. IPHES, Edificio W3, Campus Sescelades URV, Zona Educacional 4, 43007 Tarragona, Spain.
12. –
13. –
14.1 –
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. In progress
16. In progress

17. López-García, J.M., et al. (2012), A multidisciplinary approach to reconstructing the chronology and environment of southwestern European Neanderthals: the contribution of Teixoneres cave (Moià, Barcelona, Spain). *Quaternary Science Reviews* 43, 33-44. E; Ochando, J., et al. (2020), Neanderthals in a highly diverse, mediterranean-Eurosiberian forest ecotone: The pleistocene pollen record of Teixoneres Cave, northeastern Spain. *Quaternary Science Reviews* 241, 106429. E; Rufà, A., et al. (2016), Who eats whom? Taphonomic analysis of the avian record from the Middle Paleolithic site of Teixoneres Cave (Moià, Barcelona, Spain). *Quaternary International* 421, 103-115. Z; Talamo, S., et al. (2016), The Radiocarbon Approach to Neanderthals in a Carnivore Den Site: a Well-Defined Chronology for Teixoneres Cave (Moià, Barcelona, Spain). *Radiocarbon* 58, 247-265. D; Tissoux, H., et al. (2006), Datation par les séries de l’Uranium des occupations moustériennes de la grotte de Teixoneres (Moià, Province de Barcelone, Espagne). *Quaternaire* 17, 27-33. D; Álvarez-Lao, D.J., et al. (2017), Ungulates from Teixoneres Cave (Moià, Barcelona, Spain): Presence of cold-adapted elements in NE Iberia during the MIS 3. *Palaeogeography, Palaeoclimatology, Palaeoecology* 466, 287-302. E

Code data collected by: Francesca Romagnoli, Florent Rivals

1. **TOSSAL DE LA FONT**, Cova de Dalt del Tossal de la Font
2. Spain; 40°6’ N 0°2’ W.
3. F. Gusi 1982.
4. Cave deposits.
5. No
6. Level E (unit IIa in the more recent excavations).
7.1 Mousterian.
7.2 8 pieces, mostly retouched.
7.3 No
7.4 No
7.5 No
7.6 No
7.7 No
8.1 Large mammals, small mammals.
8.2 Herbaceous, shrubs/trees (based on pollen analysis, Gusi et al., 2013).
9.1 No
9.2 61.846±585 ka BP (U/Th speleothem deposits on top of layer IIa; Gusi et al., 2013).
9.3 Middle Palaeolithic based on lithic techno-typology.
10. CTF-1; CTF-2; CTF-3.
10.1 –
10.2 CTF-3: infant (based on tooth analysis).
10.3 CTF-1: L humerus; CTF-2: R hip bone.
10.4 CTF-3: LM (upper, permanent, fragment).
10.5 –
11. National Museum of Archaeology, C/ Serrano 13, Madrid, Spain.
12. –
13. –
14.1 –
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No
17. Arsuaga, J.L., Bermúdez de Castro, J.M., (1987), Estudio de los restos humanos del yacimiento de la Cova del Tossal de la Font (Villafamés, Castellón). *Cuadernos de Prehistoria y Arqueología Castellonenses* 10, 19-34. P; Gusi F. et al., (2013), La Cova de Dalt del Tossal de la Font (Vilafamés, Castellón): conclusiones preliminares de las intervenciones arqueológicas (1982 – 1987 / 2004 – 2012). *Quaderns de Prehistòria*

i Arqueologia de Castelló 31, 17-37. A, Z, E, D, P; Gusi, F. et al., (1983), Avance preliminar sobre el yacimiento del Pleistoceno medio, Tossal de la Font (Vilafamés, Castellón). *Cuadernos de Prehistoria y Arqueología Castellonenses* 7, 7-29. A; Olària, C. Et al., (2007), Noves intervencions al jaciment plistocènic de la Cova de Dalt del Tossal de la Font (Vilafamés, Castelló). *Quaderns de Prehistòria i Arqueologia de Castelló* 24, 9-26. A, Z, E, P

Code data collected by: Jean-Luc Voisin

1. **TOURVILLE-LA-RIVIÈRE**, La Fosse Marmitaine
2. Seine Maritime, Gravel quarry (Carrières et Ballastières de Normandie), France. No geographical position.
3. G. Crpentier 1967 (site discovery); A. Cottard and A. Thomann 2010 (discovery of human remains).
4. Alluvial deposit in an old meander of the Seine.
5. No
6. Level D2.
7.1 Levallois with Rocourt debitage.
7.2 Rocourt débitage.
7.3 No
7.4 No
7.5 No
7.6 No
7.7 No
8.1 Large mammals, small mammals and molluscs.
8.2 No
9.1 No
9.2 ESR and U-Th 183 to 226 000 years old (Faivre et al., 2014, Bahain et al., 2020).
9.3 Biostratigraphy on large mammals, MIS 7 (Decombe, 1980).
10. Tourville 2010 # 1174, Tourville 2010 # 1175, Tourville 2010 # 1176.
10.1 –
10.2 –
10.3 Tourville 2010 # 1174 humerus (ff); Tourville 2010 # 1175 radius (ff); Tourville 2010 # 1176: ulna (ff).
10.4 –
10.5 –
11. The three bones are temporarily housed at the laboratory UMR-5199 PACEA – Universite de Bordeaux, Bâtiment B2, Allée Geoffroy Saint-Hilaire CS 50023, 33615 Pessac Cedex, France.
12. –
13. –
14.1 –
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. –
16. –

17. Bahain J.-J., et al. (2020), ESR and ESR/U-series chronology of the Middle Pleistocene site of Tourville-la-Rivière (Normandy, France) – A multi-laboratory approach, *Quaternary International*, 556, 66-78. https://doi.org/10.1016/j.quaint.2019.06.015 D; Carpentier G., Lautridou J.P. (1982), Tourville: the low terrace of the Seine; the alluvium, periglacial deposits, interglacial fluviomarine deposits, slope deposits and palaeosols, fauna. *Bulletin – Centre de Géomorphologie, Caen*, 26, 31-34. D; Cordy J.-M., et al. (2003), Les paléo-estuaires du stade isotopique 7 à Tourville-La-rivière et à Tancarville (Seine): faune de rongeurs et cadre stratigraphique. *Quaternaire*, 14 (1), 15-23. https://doi.org/10.3406/quate.2003.1725. D; Descombes J.-C. (1980), La première faune rissienne de la basse vallée de la Seine. Implications biostratigraphiques et paléoécologiques. PhD. Université de Poitiers, n°789, 206. Z; Descombes J. C. (1983). Etude paléontologique du gisement pléistocène moyen de Tourville-la-Rivière (Seine-Maritime, France). *Bulletin de l'Association française pour l'étude du quaternaire*, 20 (4), 161-169. https://doi.org/10.3406/quate.1983.1462. Z; Faivre J.-P., et al. (2014), Middle Pleistocene human remains from Tourville-la-Rivière (Normandy, France) and their archaeological context. *PLoS ONE* 9(10): e104111. https://doi.org/10.1371/journal.pone.0104111 – P, R, D; Guilbaud M, Carpentier G. (1995), Un remontage exceptionnel à Tourville-la-Rivière (Seine-Maritime). *Bulletin de la Société Préhistorique Française*, 92 (3), 289-295. https://doi.org/10.3406/bspf.1995.10029_A; Lautridou J.P. (1982), The Quaternary of Normandy. *Bulletin – Centre de Géomorphologie, Caen*, 26, 1-92. D

Code data collected by: Giulia Marciani, Erica Piccirilli, Marco Peresani, Stefano Benazzi

1. **ULUZZO C**, Grotta-riparo di Uluzzo C, Grotta Carlo Cosma
2. Bay of Uluzzo, Puglia, Italy; 40°9’29” N, 17°57’36” E.
3. Carlo Cosma (member of the Gruppo Speleologico Salentino) discovered the cave in the 60s. The new excavation at the site started in 2016 and is currently ongoing, directed by E. Spinapolice and S. Benazzi.
4. Cave deposits.
5. No
6. Unknown.
7.1 Mousterian.
7.2 Levallois (Borzatti von Löwestern 1964).
7.3 No
7.4 No
7.5 Yes- shell scraper.
7.6 No
7.7 No
8.1 Large and small mammals (Borzatti von Löwestern 1964). 8.2 No.
8.2 –
9.1 –
9.2 OSL-dated to 46±4.0 ka layer G -Mousterian (ULOC1) (Spinapolice et al 2022).
9.3 –
10. Uluzzo 850- 856.
10.1 –
10.2 –
10.3 –
10.4 Uluzzo 850- RdI2; Uluzzo 851- RdC1; Uluzzo 852- Ldc1; Uluzzo 853- RdM1; Uluzzo 854- RdM1 Uluzzo 855- RdM2; Uluzzo 856- LdM_2. (see code 18)
10.5 –
11. Unknown.
12. Museo Civico di Paleontologia e Paletnologia Decio de Lorentiis, Via Vittorio Emanuele 117, Maglie (Lecce), Italy.
13. –
14.1 –
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No

17. Seghi, F., et al. (2024), Morphological and morphometric study of the hominin dental casts from Grotta-Riparo di Uluzzo C (Apulia, southern Italy). *American Journal of Biological Anthropology*, e24998. P; Borzatti von Löwestern, E (1964), La grotta-riparo di Uluzzo C (Campagna di scavi 1964). *Rivista di Scienze Preistoriche, XX*, *1*, 1-31. Z, A; Spinapolice, E.E. et al. (2022), Back to Uluzzo – archaeological, palaeoenvironmental and chronological context of the Mid-Upper Palaeolithic sequence at Uluzzo C Rock Shelter (Apulia, southern Italy). *Journal of Quaternary Science* 37, 217–234. doi:10.1002/jqs.3349 A
18. All dental remains listed here are known as casts. No information is available about the location of the original teeth, nor their exact archaeological provenience. In 2020 the reassessment of the material from this site led to the study of the cast stored at the Museo Civico di Paleontologia e Paletnologia “Decio De Lorentiis” in Maglie (Lecce, Apulia) (Seghi et al. 2024).

Code data collected by: Jean-Luc Voisin

1. **VAUFREY**, Grotte Vaufrey, Grotte XV du massif du Conte
2. Cave, near the village of Cénac-et-Saint-Julien, Dordogne, France, 4 km South of Sarlat-la-Canéda (often name Sarlat); coordinates unknown.
3. R. Vaufrey 1930 (discovery), J.-P. Rigaud 1968 (excavations).
4. Cave deposits.
5. No
6. Vaufrey 1: unit 1, layer 1.
7.1 Mousterian.
7.2 Mousterian, Quina type (Unit 1, layer 1).
7.3 No
7.4 No
7.5 No
7.6 No
7.7 No
8.1 Large and small mammals, birds, fishes.
8.2 No
9.1 No
9.2 U-Th: Unit 1 – Layer I: 74 000 +/- 18 000 years old (Rigaud 1988).
9.3 Biostratigraphy based on large and small mammals. Unit 1: MIS 4.
10. Vaufrey 1.
10.1 –
10.2 Vaufrey 1: senile (tooth wear).
10.3 –
10.4 Vaufrey 1: LM_2.
10.5 Vaufrey 1: hypercementosis.
11. Laboratory, UMR PACEA 5199 – Universite de Bordeaux, Bâtiment B2, Allée Geoffroy Saint-Hilaire CS 50023, 33615 Pessac Cedex, France.
12. –
13. –
14.1 No
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No
17. Garralda M.D. et al., (2004), La molaire néandertalienne de la grotte Vaufrey (Dordogne, France), *Bulletins et mémoires de la Société d'Anthropologie de Paris* 16 (3-4), 189-199. https://doi.org/10.4000/bmsap.4023. P, R; Hernandez M. et al., (2014),

A revised chronology for the Grotte Vaufrey (Dordogne, France) based on TT-OSL dating of sedimentary quartz. *Journal of Human Evolution* 75, 53-63. https://doi.org/10.1016/j.jhevol.2014.05.010. D; Rigaud J.-P. (Eds.) (1988) La Grotte Vaufrey, Dordogne. *Mémoires de la Société Préhistorique Française*, 19, 616. A, R, Z, D

Code data collected by: Dušan Mihailović, Bojana Mihailović, Predrag Radović

1. **VELIKA BALANICA**, Velika Balanica Cave
2. Sićevo Gorge, southern Serbia; 43°20' N, 22°05' E.
3. D. Mihailović 2002 (archaeology), M. Roksandic, P. Radović, J. Lindal (paleoanthropology).
4. Cave deposits.
5. No
6. Layer 3b (BH-5), Layer 3a (BH-2, BH-3, BH4).
7.1 Early Quina (Layer 3); Mousterian (Layer 2).
7.2 Quina (Layer 3), Levallois, Discoid (Layer 2).
7.3 No
7.4 No
7.5 No
7.6 Possible ocher.
7.7 Combustion features (Layers 3 and 2).
8.1 Large mammals.
8.2 Not studied.
9.1 No
9.2 Layer 3a dated to 285 ± 34 ka and 295 ± 74 ka (TL of burned flint) (Mihailović et al. 2022).
9.3 –
10. BH-2; BH-3 + BH-4 (same individual); BH-5.
10.1 –
10.2 BH-2 and BH-5: adult (dental wear), BH 3 + BH-4: late childhood (dental eruption).
10.3 –
10.4 BH-2: LM^3; BH-3: RdM^2, BH-4: RM^1; BH-5: LI^1.
10.5 –
11. National Museum of Serbia, Trg Republike 1a, Belgrade, Serbia.
12. –
13. –
14.1 No
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –
15. No
16. No
17. Marín-Arroyo, A.B. (2014), Middle Pleistocene subsistence in Velika Balanica, Serbia: Preliminary results. In: Mihailović, D. (Ed.), Palaeolithic and Mesolithic Research in the Central Balkans. Serbian Archaeological Society, Belgrade, 121-129. Z; Mihailović,

D., et al. (2022), Connections between the Levant and the Balkans in the late Middle Pleistocene: Archaeological findings from Velika and Mala Balanica Caves (Serbia). *Journal of Human Evolution* 163, 103138. A, D, Z; Roksandić, M., et al. (2022), Early Neanderthals in contact: The Chibanian (Middle Pleistocene) hominin dentition from Velika Balanica Cave, Southern Serbia. *Journal of Human Evolution* 166, 103175. P

Code data collected by: Jean-Luc Voisin

1. **VERGISSON 2**, Grotte de Ronzevaux, Grotte de la Maréchaude

2. Rock shelter, near the village of Vergisson, Saône-et-Loire, France, about 10 km West from Mâcon; 46°18’52” N, 4°42’56” E (for the Roche de Vergisson).

3. Rozet between 1840 and 1850 (discovery and excavations of Vergisson 1 (grotte de la tannière)); A. Jannet 1964 (discovery of Vergisson 2); J. Combier 1954 – 1961 (excavations).

4. Cave deposits.

5. No

6. Level 3.

7.1 Mouterian.

7.2 Mousterian Quina type.

7.3 No

7.4 No

7.5 No

7.6 No

7.7 No

8.1 Large and small mammals.

8.2 No

9.1 No

9.2 Animal bone, level 2, C14: 42 300 ± 670 BP and >43 500 BP 8Condemi, Giuliani 2022).

9.3 Biostratigraphy, based on small mammals (MIS4-3).

10. Vg2 n°1 (no catalogue number), Vg2 n°2 (no catalogue number), Vg2 A, Vg2 B, Vg2 C, Vg2 D, Vg2 E, Vg2 G, Vg2 H, Vg2 I, Vg2 J, Vg2 K, Vg2 L, Vg2 M, Vg2 N, Vg2 O, Vg2 P, Vg2 Q, Vg2 R, Vg2 S, Vg2 T, Vg2 U.

10.1 –

10.2 Vg2 A: 6,5 years old; Vg2 B: 6,5-7 years old; Vg2 E: >6 years old; Vg2 H: >12 years old; Vg2 I: >12 years old; Vg2 J: >12 years old; Vg2 K: 9,5 years old; Vg2 L: 12,5- 13 years old; Vg2 M: >10,5 years old; Vg2 N: 12,5-13 years old. All according to Granat & Heim (2003) method.

10.3 Vg2 n°1 (no catalogue number): cranial fragment (ff); Vg2 n°2 (no catalogue number): foot phalanx.

10.4 Vg2 A: RI_2; Vg2 B: LI_2; Vg2 C: LI_2 (ff); Vg2 D: RI^2; Vg2 E: LI_1; Vg2 G: LC_1 (ff); Vg2 H: RP_4; Vg2 I: RP_4 (ff); Vg2 J: LP_4; Vg2 K: RP_3; Vg2 L: RM_3; Vg2 M: LM_2; Vg2 N: LM_3; Vg2 O: RM_1; Vg2 P: LM_2 (ff) (partially destroyed for study during the 80s); Vg2 Q: M_{lower} (ff) (partially destroyed for study during the 80s); Vg2 R: RM_1 (ff) (partially destroyed for study during the 80s); Vg2 S: C (lost); Vg2 T: RM^3; Vg2 U: RM^1.

10.5 –

11. Musée départemental de Préhistoire de Solutré, Chemin de la Roche, 71960 Solutre-Pouilly France.

12. –

13. –

14.1 No

14.2 –

14.3 –

14.4 –

14.5 –

14.6 –

14.7 –

14.8 –

14.9 –

14.10 –

15. No

16. No

17. Chaput F. (2001), La faune des grands mammifères du site Paléolithique moyen de Vergisson II. (Saône-et-Loire, France). *Archeo-inter-publica* 1(1), 19-44. Z; Combier J. (2001), Le gisement Paléolithique moyen de Vergisson II. *Archeo-inter-publica* 1(1), 1-18. A, Str; Condemi S., Giuliani M.-E. (2022,) Les restes humains de Vergisson. In: *Hommes, terroir et territoires – Le Paléolithique en Bourgogne méridionale*, Floss H. (Ed.), VML, Rahden, 633-646. P, R, D; de Lumley M. A. (1976), Les néandertaliens dans le Nord et le centre. In: *La Préhistoire française – Tome I, les civilisations paléolithiques et mésolithiques de la France*, de Lumley H. (Ed.), Edition du CNRS, Paris, 588-596. P; Granat J., Heim J.-L. (2003), Nouvelle méthode d’estimation de l’âge dentaire des Néandertaliens, *L’Anthropologie (Paris)* 107 (2), 171-202. https://doi.org/10.1016/S0003-5521(03)00009-8. P, R; Jeannet M. (2018), Vergisson II (Saône-et-Loire, France) : microfaune et environnement de l’Homme de Néandertal. *Quaternaire*, 29 (3), 233-242. https://doi.org/10.4000/quaternaire.10270. Z, D

18. There are 6 “Mousterian” sites aligned on the southern flank of the Roche de Ver gisson, 2 km from the famous Roche de Solutré. Vergisson 1, 1’, 3 and 5 have yielded no human remains.

Code data collected by: Jean-Luc Voisin

1. **VERGISSON 4**
2. Rock shelter, near the village of Vergisson, Saône-et-Loire, France, about 10 km West from Mâcon; 46°18’52” N, 4°42’56” E (for the Roche de Vergisson).
3. Rozet 1840-1850 (discovery and excavation of Vergisson 1); J. Combier 1954 (discovery of Vergisson 4) and 1957 – 1962 (excavations).
4. Cave deposits.
5. No
6. 11 archeological layers, no information on the provenience of human remains.

7.1 Mouterian.
7.2 Mousterian Quina type.
7.3 No
7.4 No
7.5 No
7.6 No
7.7 No

8.1 Large mammals.
8.2 No

9.1 No
9.2 Animal bone, C14, 39 780 ± 540 BP (no information on layer available, Condemi, Giuliani 2022).
9.3 –

10. Vg4-63; Vg4-83 (or dent F).

10.1 –
10.2 Vg4-83: 6 to 9 years old (root formation).
10.3 Vg4-63: parietal bone (ff).
10.4 Vg4-83 (dent F): LI^1.
10.5 Vg4-83 : enamel striations, indicating that it belongs to a left-handed person.

11. Musée départemental de Préhistoire de Solutré, Chemin de la Roche, 71960 Solutre-Pouilly France.
12. –
13. –

14.1 No
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –

15. No
16. No

17. Combier J., Chaput F. (1999), Le gisement paléolithique moyen de Vergisson II et sa faune de grands mammifères. *Travaux de l’Institut de Recherche Val-De-Saône Mâconnais* 4, 9-34 A, Z; Condemi S., et al. (2017), Vergisson 4: a left-handed Neandertal. *American Journal of Physical Anthropology* 162 (1), 186-190. https://doi-org.inee.bib.cnrs.fr/10.1002/ajpa.23101. P, R; Condemi S., Giuliani M.-E. (2022), Les restes humains de Vergisson. In: *Hommes, terroir et territoires – Le Paléolithique en Bourgogne méridionale*, Floss H. (Ed.), VML, Rahden, 633-646. P, R, D.
18. There are 6 “Mousterian” sites aligned on the southern flank of the Roche de Vergisson, 2 km from the famous Roche de Solutré. Vergisson 1, 1’, 3 and 5 have yielded no human remains.

Code data collected by: Fred H. Smith, Ivor Janković, Lia Vidas, Marko Banda, Mateja Hajdinjak

1. **VINDIJA**, Vindrija, Križnjakova jama, Lavska jama
2. Croatia, Varaždin county, Donja Voća municipality; 46°17'60" N, 16°4'12" E.
3. Stjepan Vuković 1928 – 1967; Mirko Malez 1974 – 1987.
4. Cave deposits.
5. No
6. Unit G1, Unit G3, Unit I.

7.1 Mousterian / Mixed with UP (G1), Mousterian (G2-G3), not studied (G4-M).

7.2 G1 – Laminar/blade, Expedient/flake, Bifacial, G2 – Other, G3 – Expedient/flake, Laminar/blade, Bifacial.

7.3 Bone (retouchers, split-base and massive base points, engraved bear baculum, complex G).

7.4 No

7.5 No

7.6 No

7.7 No

8.1 Large mammal, small mammal, birds, fish.

8.2 Pinus (Draxler 1986).

9.1 Vi-207 (hominin bone), C14, 29,080 ± 400 yrs BP (OxA-8296), layer G1, Smith et al. 1999; Vi-208 (hominin bone), C14, 28,020 ± 360 yrs BP (OxA-9295), layer G1, Smith et al. 1999; Vi-75 (hominin bone), C14, >42,000 yrs BP (Ua-13873), layer G3, Krings et al. 2000; Vi-33.19 (SP2756) (hominin bone), C14 (HYP), 44,300 ± 1,200 yrs BP (OxA-X-2717-11), layer G3, Devièse et al. 2017; Vi-*28 (SP4162) (hominin bone), C14 (HYP), 46,200 ± 1,500 yrs BP (OxA-X-2687-57), layer G1, Devièse et al. 2017; Vi-208/Vi-11.29 (SP3563) (hominin bone), C14 (HYP), 42,700 ± 1,600 yrs BP (OxA-X-2689-09), layer G1, Devièse et al. 2017; Vi-207/Vi-11.41 (SP3562) (hominin bone), C14 (HYP), 43,900 ± 2,000 yrs BP (OxA-X-2689-10), layer G1, Devièse et al. 2017; Vi-2291-81 (hominin bone), C14, 44,450 ± 550 yrs BP, complex G, Devièse et al. 2017.

9.2 2-Vi-G1 (animal bone), C14, 18,280 ± 440 yrs BP (Z-2432), layer G1, Obelić et al. 1994; animal bone, C14, 33,000 ± 400 yrs BP (ETH-12714), layer G1, Karavanić 1995; animal bone, C14, 46,800 +2300/-1800 yrs BP (VERA-1428), layer G1, Wild et al. 2001; animal bone, C14, 37,000 ± 600 yrs BP (VERA-0109), layer I, Wild et al. 2001; Vi-*17 (animal bone), C14, > 46,700 yrs BP (OxA-2695-21), layer G1, Devièse et al. 2017; Vi-*6 (animal bone), C14, > 48,400 yrs BP (OxA-34471), layer G1, Devièse et al. 2017; Vi-*7 (animal bone), C14, > 49,000 yrs BP (OxA-34472), layer G1, Devièse et al. 2017; Vi-*60 (animal bone), C14, 47,200 ± 2,900 yrs BP (OxA-34473, complex G, Devièse et al. 2017; split-base bone point, U-Th, 45.0 ± 6 ka BP, layer G1, Karavanić et al. 1998; animal bone, U-Th, 32.8 ± 1.9 ka BP, complex G, Wild et al. 2001; animal bone, U-Th, 22.8 ± 0.9 ka BP; 20.7 +1.1/-1.2; 21.1 ± 1.0 ka BP, complex G, Wild et al. 2001; animal bone, U-Th, 33.1 ± 0.8 ka BP, layer G1, Wild et al. 2001; animal bone, U-Th, 27.9 ± 1.0 ka BP, layer G1, Wild et al. 2001; animal bone, 41.0 + 1.0/-0.9 ka BP, layer G3, Wild et al. 2001; Vi-G3 (animal bone), U-Th, 33.5 + 9.0/-8.1 ka BP (UMD170706-X24), layer G3, Karavanić et al. 2021; Vi-G3 (animal tooth), U-Th, 38.6 + 7.6/-6.7 ka BP (UMD170706-X23), layer G3, Karavanić et al. 2021; animal bone, C14, 40580 ± 130 (Z-7439) / 46400 ± 2600 (OxA-41143, UF), layer G3, Karavanić et al. 2024; animal bone, C14, 29410 ± 80 (Z-7495) / 42800 ± 1900 (OxA-X311434, UF), layer G3, Karavanić et al. 2024.

9.3 Units G1 – M: MIS 3 - MIS 6 (C14, U-Th, faunal taxa).

10. Vi 201, 202, 203, 204, 205, 206, 207, 208, 209, 224, 225, 226, 227, 228, 229, 230, 231, 250, 251, 252, 253, 254 (264), 255, 256, 257, 258, 259, 260, 261, 262, 263, 265, 266, 275, 278, 279, 280,281,282, 284, 285, 286, 287, 288, 289, 290, 293, 296, 298, 300, 301, 302, 303, 304, 305, 306, 307, 308, 11.47, 11.48, 11.49, 11.52, 13.7 (33.7), 13.8 (33.3), 11.34, 33.10, 33.11, 33.15, 33.16, 33.17, 33.19, 33.20, 33.22, 33.23, 33.25, 33.26, 33.28, 33.29, 33.30, 33.31, 33.36, 33.38, 33.39, "28", "87".

10.1 –

10.2 Adult specimens: Vi 201, 202, 203, 204, 205, 206, 207, 208, 209, 225, 226, 227, 228, 229, 230, 231, 250, 251, 252, 255, 256, 257, 258, 259, 260, 261, 262, 263, 265, 266, 275, 278, 280, 281,282, 284, 286, 287, 288, 289, 290, 293, 296, 298, 300, 301, 302, 303, 304, 305, 306, 307, 308; Adolescent: 224; Juvenile: 253, 254 (264), 279, 285. Age determination: morphology, frontal sinus development, surface histology of frontal bones (supraorbital tori); extent of trilaminar development, thickness, development of muscle attachments and morphological features for vault bones; size and morphology of mandibles; root development and crown attrition for teeth.

10.3 Vi 261 L lateral supraorbital torus with squama (f), Vi 275 L medial supraorbital torus with squama (f); Vi 278 posterior-central frontal squama (f); Vi 284 R lateral supraorbital torus fragment (f); Vi 255 central frontal squama with superior frontal sinus (f); Vi 256 L posterior frontal fragment (f); Vi 230 L anterior-superior parietal (f); Vi 202 R frontal supraorbital torus portion (f); Vi 204 R posterior parietal (f); Vi 302 L parietal posterior fragment (d); Vi 205 occipital (f); Vi 208 anterior portion of the L parietal (f); Vi 224 L frontal interorbital region and occipital torus (f); Vi 227 L frontal supraorbital fragment (f); Vi 254 central part of the frontal squama (f); Vi 251 left anterior-superior parietal fragment (f); Vi 252 R occipital fragment (f); Vi 257 L parietal fragment (f); Vi 258 R occipital fragment (f); Vi 260 R frontal supraorbital torus and squama (f); Vi 262 R frontal supraorbital torus (f); Vi 263 R inferior parietal fragment (f); Vi 279 R frontal supraorbital torus and squama (f); Vi 280 posterior part of the frontal squama (f); Vi 281 R occipital lateral fragment (f); Vi 282 R occipital fragment (f); Vi 285 L parietal fragment (ff); Vi 293 L parietal fragment (ff); Vi 296 R occipital fragment (ff); Vi 298 R parietal fragment (ff); Vi 299 R occipital fragment (f); Vi 301 R occipital fragment (f); Vi 303 L parietal posterior fragment (f); Vi 304 L frontal posterior squama (f); Vi 305 L frontal supraorbital torus and squama (f); Vi 308 L frontal fragment (f); Vi 11.47 frontal fragment (ff); Vi 11.48 frontal fragment (ff); Vi 11.49 frontal fragment (ff); Vi 11.34 parietal fragment (ff); Vi 307 L zygomatic (f); Vi 225 R maxilla (f); Vi 259 L maxilla with M^2 (f); Vi 206 R mandibular corpus with C, M_1, M_2, M_3 (f); Vi 207 R mandibular ramus (f); Vi 226/265 L mandible lacking coronoid with M_1 (d); Vi 231 L mandibular corpus with P_3, M_1, M_2, M_3 (f); Vi 250 R mandibular ramus and corpus (f); Vi 306 mandibular symphysis (f); Vi 11.52 R mandibular ramus (f); Vi 209 L scapular fragment (f) current location of the specimen is unknown; Vi 228 R humerus (f); Vi 253 L humerus (ff); Vi 266 R humerus (ff); Vi 300 R proximal manual phalanx (i); Vi 13.7 (33.7) L ilium fragment (ff); Vi 13.8 (33.3) L proximal radial shaft (f); Vi 33.10 femoral shaft fragment (ff); Vi 33.28 long bone shaft fragment (ff); Vi 203 L proximal 5th metatarsal (f); Vi 33.11 long bone shaft fragment (ff), Vi 33.15 long bone shaft fragment (ff), Vi 33.16 long

bone shaft fragment (ff), Vi 33.17 long bone shaft fragment (ff), Vi 33.19 long bone shaft fragment (ff), Vi 33.20 long bone shaft fragment (ff), Vi 33.22 long bone shaft fragment (ff), Vi 33.23 long bone shaft fragment (ff), Vi 33.25 long bone shaft fragment (ff), Vi 33.26 long bone shaft fragment (ff), Vi 33.29 long bone shaft fragment (ff); Vi 33.30; long bone shaft fragment (ff) Vi 33.31 long bone shaft fragment (ff); Vi 33.36 long bone shaft fragment (ff); Vi 33.38 long bone shaft fragment (ff); Vi 33.39 long bone shaft fragment (ff); "28" long bone fragment (ff), "87" long bone fragment (ff).

10.4 Vi 201 LI_2 (i); Vi 286 RI_2 (d); Vi 287 RC^1; Vi 288 LC_1 (d); Vi 289 RI^2 (d); Vi 290 RI^1 (d).

10.5 –

11. Institute for Quaternary Paleontology and Geology, Croatian Academy of Sciences and Arts, Ante Kovačića 5, 10000 Zagreb, Croatia.

12. –

13. –

14.1 Bone and sediments.

14.2 Vi 33.16, Vi 33.25, Vi 33.26, Vi 33.15, Vi 33.17, Vi 33.19, Vi 11.41, Vi 11.29, "28", "87", sediments from layer G3.

14.3 Ancient DNA extracts and DNA libraries at the Max Planck Institute for Evolutionary Anthropology, Leipzig, Germany.

14.4 Genbank: FM865410, AM948965, KJ533544, KJ533545, MG025539; ENA: ERP000119, PRJEB21882, PRJEB11828, PRJEB21157(link).

14.5 Mitochondrial DNA, shotgun, nuclear DNA captures.

14.6 All combinations of UDG treatments, depending on the data type: Full/Partial/None

14.7 Shotgun: 0-0.5x, 1-5x, and >5x.

14.8 Not applicable. Capture of entire chromosome 21, not SNP based captures.

14.9 All F.

14.10 Vi33.19 and "87" belong to the same individual, as well as Vi33.15 and Vi33.17.

15. Yes (^{13}C, ^{15}N) (Richards et al. 2000).

16. ZooMS (383 samples, 1 Hominin: Vi-*28) (Dèviese et al. 2017).

17. Ahern, J.C.M. et al. (2004), New discoveries and interpretations of hominid fossils and artifacts from Vindija Cave, Croatia. *Journal of Human Evolution* 46, 27-67. P, A; Blaser, F. et al. (2002), L'industrie du site néandertalien de la grotte de Vindija (Croatie): une révision des matières premières lithiques. *L'Anthropologie* 106, 387-398. R; Brajković, D., Miracle, P.T. (2008), Middle Palaeolithic and Early Upper Palaeolithic Subsistence Practices at Vindija Cave, Croatia. In: Darlas, Mihailović (eds.), The Palaeolithic of the Balkans: Proceedings of the XV World Congress of the International Union for Prehistoric and Protohistoric Sciences. BAR International Series 1819.Oxford: Archaeopress, 107-116. Z; Bruner, K. (2009), Testing stratigraphic integrity of Upper and Middle Paleolithic deposits in Vindija Cave (Croatia): a chipped stone refitting analysis. University of Kansas, Lawrence. A; Devièse, T. et al. (2017), Direct dating of Neanderthal remains from the site of Vindija Cave and implications for the Middle to Upper Paleolithic transition. *Proceedings of the National Academy of Sciences of the United States of America* 114, 10606-10611. D, G; Draxler, I. (1986), Polenanalytische Untersuchungen der Sedimentproben aus der Vindija Höhle bei Donja Voća, NW Kroatien. *Rad JAZU* 424(21), 275-283. E; Green, R.E. et al. (2010), A Draft Sequence of the Neandertal Genome. *Science* 328, 710-722. G; Hajdinjak, M. et al. (2018), Reconstructing the genetic history of late Neanderthals. *Nature* 555, 652-656. G; Higham,

T. et al. (2006), Revised direct radiocarbon dating of the Vindija G1 Upper Paleolithic Neandertals. *Proceedings of the National Academy of Sciences of the United States of America* 103, 553-557. D; Karavanić, I., (1995), Upper Paleolithic Occupation Levels and Late-Occurring Neandertal at Vindija Cave (Croatia) in the Context of Central Europe and the Balkans. *Journal of Anthropological Research* 51, 9-35. A, D; Karavanić, I., Smith, F.H. (1998), The Middle/Upper Paleolithic interface and the relationship of Neanderthals and early modern humans in the Hrvatsko Zagorje, Croatia. *Journal of Human Evolution* 34, 223-248. A; Karavanić, I., Patou-Mathis, M. (2009), Middle/Upper Paleolithic Interface in Vindija Cave (Croatia): New Results and Interpretations. In: Camps, Chauhan (eds.), Sourcebook of Paleolithic Transitions. Dordrecht: Springer, 397-405. Z; Karavanić, I. et al. (1998), Néandertaliens et paléolithique supérieur dans la grotte de Vindija, Croatie: Controverses autour de la couche G1, *L' Anthropologie* (Paris) 102(2), 131-141. A, D; Karavanić, I. et al. (2021), New U-Th dates from Vindija, Velika pećina (Kličevica) and Mujina pećina and their implications for chronology of the Middle Paleolithic in Croatia. *Collegium antropologicum* 45(1), 1-10. A, D; Malez, M., Ullrich, H. (1982), Neuere paläanthropologische Untersuchungen am Material aus der Höhle Vindija (Kroatien, Jugoslawien). *Palaeontologia Jugoslavica* 29, 1-44. P; Miracle, P.T., et al. (2010), Last glacial climates, "Refugia", and faunal change in Southeastern Europe: Mammalian assemblages from Veternica, Velika pecina, and Vindija caves (Croatia). *Quaternary International* 212, 137-148. Z, E; Patou-Mathis, M. et al. (2018), The evidence from Vindija Cave (Croatia) reveals diversity of Neandertal behaviour in Europe. *Quaternary international* 494, 314-326. Z; Prüfer, K., et al. (2017), A high-coverage Neandertal genome from Vindija Cave in Croatia. *Science* 358, 655-658. G; Richards, M. P. et al. (2000), Neanderthal diet at Vindija and Neanderthal predation: the evidence from stable isotopes. *Proceedings of the National Academy of Sciences of the United States of America* 97(13), 7663-7666. S; Smith, F.H., Ahern, J.C.M., (1994), Additional cranial remains from Vindija cave, Croatia. *American Journal of Physical Anthropology* 93, 275-280. P; Smith, F.H. et al. (1999), Direct radiocarbon dates for Vindija G1 and Velika Pecina Late Pleistocene hominid remains. *Proceedings of the National Academy of Sciences of the United States of America* 96, 12281-12286. D; Vuković (1935). Istraživanje prethistorijskog nalazišta u spilji Vindiji kod Voće. Varaždin: Spomenica varaždinskog muzeja (1925 – 1935), 73-85. A; Wild, E.M. et al. (2001). Age determination of fossil bones from the Vindija Neanderthal site in Croatia. *Radiocarbon* 43, 1021-1028. D; Wolpoff, M.H. et al. (1981), Upper pleistocene human remains from Vindija cave, Croatia, Yugoslavia. *American Journal of Physical Anthropology* 54(4), 499-545. P; Wood, B. (2011), Wiley-Blackwell Encyclopedia of Human Evolution. Wiley-Blackwell, Hoboken. P; Smith, F.H. et al. (2024), Vindija Cave. A Late Neandertal Site in Northern Croatia. FF Press, Zagreb. P, A, Z; Smith, F.H. et al. (2015), Morphological evidence for modern human influences in late Central European Neandertals. *Anthropologie* (Brno) 53: 61-76. P; Obelić, B., et al. (1994), Rudjer Bošković Institute Radiocarbon Measurements XIII, *Radiocarbon* 36(2), 303-324., D; Karavanić, I., et al. (2024), Chronology of hominin activity at Vindija Cave, Croatia: new dates recorded via standard and ultrafiltration AMS. *Antiquity* 98(398), e7, D

Code data collected by: Carolin Röding

1. **WEIMAR-EHRINGSDORF**, Ehringsdorf
2. Thüringen, Germany; 50°57'21" N, 11°20'60" E.
3. 1871 first isolated stone artifact, A. Möller 1907 (first stone tools in combination with charcoal and fauna), Fischer 1908 (first human remains).
4. Alluvial (travetine layers) covered by loess.
5. No
6. All human remains from layer 4 in the lower travertine and all stone tools from lower to upper travertine.

7.1 Mousterian.
7.2 Flakes, partially bifacial, scrapers, 'leafpoints'.
7.3 No
7.4 No
7.5 No
7.6 No
7.7 Combustion features (upper and lower travertine)
8.1 Large mammals, small mammal, birds; reptiles; amphibians; molluscs (all in lower travertine).
8.2 Based on pollen (e.g., different *Quercus, Salix cinerea,Corylus avellana, Malus silvestris, Ulmus laevis, Populus tremulus)* and mollusks: forest environment ranging from dry forest and forest steppes to swamps and alluvial forests (Behm-Blancke 1960).
9.1 No
9.2 Upper travertine, U/Th,: sample WUT3/15: 221 ± 11 ka, sample WUT3/16: 174 ±11 ka, sample WUT3/16: 208 ±14 ka, 222 ±11 ka, sample WUT3/13: 200.6 ±8.4 ka, sample WUT3/12: 195 ±10 ka. Lower travertine, U/Th: sample WLT2/11: 254 ±22 ka, sample WLT1/9: (227 ±21 ka), 246 ±18 ka, 245 ±16 ka, sample WLT1/7: (204 ±20 ka), 220 ±15 ka, sample WLT1/4: (216 ±17 ka), sample WLT1/3: 265 ±16 ka, sample WLT1/1: (234 ±13 ka), 258 ±24 (Mallick, Frank 2002 for all). ( ) brackets reflect ages of pore cement or bulk samples not in agreement with the micrite/spar ages and thus indicate contamination and/or alteration of bulk material and early diagenetic cements.
9.3 Based on faunal remains: "older than Eem probably MIS7".
10. MNI: 6. There are 3 different descriptions/names of what is preserved of Ehrignsdorf individuals (cf. Vlcek, 1993; Behm-Blancke, 1960; Oeakley, 1981). Ehringsdorf A (1) with catalogue numbers: 1001/69 (A1), 1002/69 (A2), 1046/69 (A3), 1047/69 (A4); Ehringsdorf B (2) with the catalogue number 1003/69 (B1); Ehringsdorf C (3) with the catalogue number 1005/69; Ehringsdorf D (4) with the catalogue number 1006/69 (D1); Ehringsdorf E (5) with the catalogue number 1008/69; Ehringsdorf F (6) with the catalogue number 1009/69; Ehringsdorf G (7 and 8) with catalogue numbers 1010/69 (G1), 1011/69 (G2), 1012/69 (G3), 1018/69 (G4), 1019 (G5), 1045/69 and 1042/69 (G6), 1021/69 (G7), 1022/69 (G8), 1013/69 (G9), 1023/69 (G10), 1014/69 (G11), 1015/69 (G12), 1016/69 (G13), 1017/69 (G14); Ehringsdorf H with catalogue numbers 1024/69 (H1), 1025/69 (H2), 1026/69 (H3), 1027/69 (H4), 1028/69 (H5), 1029/69 (H6), 1030/69 (H7), 1031/69 (H8), 1032/69 (H9), 1039/69 (H10); Ehringsdorf I (7 and 8) with catalogue numbers 1048/69 (G1) and 1049/69 (G1)

10.1 Ehringsdorf F: possibly female (chin robusticity), Ehringsdorf H: possibly female (morphology of the frontal bone and the nuchal plane).
10.2 Ehringsdorf A, B, C, D: adult (vault thickness), Ehringsdorf E: adult (bone size), Ehringsdorf F (dental wear), Ehringsdorf G: around 11 years old (dental eruption, epiphyseal fusion), Ehringsdorf H: adult (cranial sutures and vault thickness).
10.3 Ehringsdorf A: parietal bone (ff) 4 fragments (A1-4); Ehringsdorf B: L parietal bone (B1) (f); Ehringsdorf C: R parietal bone (f); Ehringsdorf D: R parietal bone (D1) (f); Ehringsdorf E: R femur shaft (ff); Ehringsdorf F: mandible (f) with all teeth except RI_1 and RI_2; Ehringsdorf G: mandible (G1) (f) with RI_1, RI_2, RC_1, RP_3, RdM_2 (?), LI_1, LI_2, LP_4, LM_1, LdM_2(?), L clavicle (G4) (ff), R clavicle (G5) (ff), R distal humerus (2 fragments G6) (ff), R radius (G7) (f), R ulna (G8) (f), L radius (G9) (ff), hand phalanx (G10), L rib 1 (G11) (f), L rib (G12) (ff), L rib (G13) (ff), a block including 5 vertebra (ff), 6 R and 7 L rib fragments (ff) (G14); Ehringsdorf H: frontal bone (H1 and H2) (f), L temporal bone (H3) (d), L parietal bone (H4-7) (f), R parietal bone (H8) (d), occipital bone (H9) (f), L sphenoid bone (H10) (ff).
10.4 Ehringsdorf G: R or LI^2 (G2), R or LI^2 (G3); Ehringsdorf I: LM_1 and LP_4 (both G1).
10.5 –
11. Human remains: Thüringisches Landesamt für Archäologische Denkmalpflege, Petersberg 12, 99084 Erfurt, Germany.
12. –
13. –

14.1 No
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –
14.9 –
14.10 –

15. No
16. No
17. Behm-Blancke, G. (1960), Altsteinzeitliche Rastplätze im Travertingebiet von Taubach, Weimar, Ehringsdorf. Alt-Thüringen. *Jahresschr. d. Museums f. Ur- und Frühgeschichte Thüringens* 4. P, A, Z, E; Mania, D. (1993), Zur Paläontologie der Travertine von Weimar-Ehringsdorf. *Fossile Menschenfunde von Weimar-Ehringsdorf,* Konrad Theiss Verlag, Stuttgart, 26-42. Z, E; Steiner, W. (1993), Geologischer Aufbau und Bildungsgeschichte der Travertine von Weimar-Ehringsdorf unter besonderer Betrachtung der Hominiden- und Artefaktfundschichten. *Fossile Menschenfunde von Weimar-Ehringsdorf,* Konrad Theiss Verlag, Stuttgart, 14-25. D; Vlček, E. (1993), *Fossile Menschenfunde von Weimar-Ehringsdorf.* Konrad Theiss Verlag, Stuttgart, 56ff. P; Kot, M. (2017), Bifacial and unifacial technology: A real difference or a problem of typo–technological approach? The example of the Ehringsdorf assemblage. *Quaternary International* 428, 66-78. A, R; Mallick, R., Frank, N. (2002), A new technique for precise uranium-series dating of travertine micro-samples. *Geochimica et Cos-*

mochimica Acta 66, 4261-4272. D; Schwarcz H. P., et al. (1988), The Bilzingsleben archaeological site: new dating evidence. *Archaeo.* 30, 5-17. D; Virchov, H. (1920), Die menschlichen Skeletreste aus dem Kämpfe'schen Bruch im Travertin von Ehringsdorf bei Weimar. Jena, G. Fischer. P; Tattersall, I., Schwartz, J.H. (2000), *Extinct Humans*. Peter N. Nevraumont Book, New York. P; Street, M., et al. (2006), A critical review of the German Paleolithic hominin record. *Journal of Human Evolution* 51, 551e579. P

18. Morphology does not give much information about taxonomy (not much has been published), except for the adult mandible, it dates rather early and might be considered pre-Neanderthal by some. Regarding dating, several papers mention issues and dates are not necessarily consistent in old papers (Brunnack et al. 1983; Blackwell & Schwarcz, 1986; Schwarcz et al., 1988).

Code data collected by: Francesca Romagnoli, Florent Rivals

1. **ZAFARRAYA**, Boquete de Zafarraya, Cueva del Boquete de Zafarraya
2. Spain; 36º56'58" N, 4º7'40" W.
3. C. Barroso Ruíz 1979.
4. Cave deposits.
5. No
6. Units UE 31; UF 35. Human remains were found at the entrance of the cave (Sala de Entrada, squares P-Q/17-18).
7.1 Mousterian.
7.2 Levallois.
7.3 No
7.4 No
7.5 No
7.6 No
7.7 Hearths.
8.1 Large mammal, small mammal, reptile/amphibians.
8.2 Herbaceous, shrubs/tree (pollen and anthracological analyses; Lebreton, 2003; Barroso et al., 2006).
9.1 U-Series dating by γ-spectroscopy was unsuccesful (Michel et al., 2003, 2006) and no collagen could be recovered from two bones (Z1 and Z2) for radiocarbon dating (Wood et al., 2013).
9.2 Between 38.7 ka and 49.3 ka (C14, AMS) (Michel et al., 2003, 2006, 2013; Wood et al., 2013).
9.3 –
10. Zaf. 1-27.
10.1 Male (Zaf 6, Zaf 18, Zaf 27), female (Zaf 15, Zaf 26, Zaf 27).
10.2 Adult (Zaf 2; Zaf 4-5-18; Zaf. 1; Zaf. 15; Zaf. 26; Zaf. 3; Zaf. 17; Zaf. 19), 18-22 years (Zaf 6); 20-21 years (Zaf 27).
10.3 Zaf. 2: mandible; Zaf.4-5-18: mandible (3 fragments of the same); Zaf. 6: R scapula; Zaf.19: R rib; Zaf.22: humerus; Zaf.17: coxis; Zaf. 1: R femur; Zaf.15: L femur; Zaf. 26: R femur; Zaf. 27: R tibia; Zaf. 3: R foot phalange (proximal phalanx of the second toe).
10.4 Zaf 2: RI_1, RI_2, LC, RC, LP_3, LP_4, RP_3, RP_4, LM_1, LM_2, LM_3, RM_1, RM_2; Zaf 4-5-18 (only the roots are preserved): RI_1, RM_1, RM_2 .
10.5 –
11. Museo de Málaga, Plaza de la Aduana, Málaga, Spain.
12. –
13. –
14.1 –
14.2 –
14.3 –
14.4 –
14.5 –
14.6 –
14.7 –
14.8 –

14.9 –

14.10 –

15. –

16. –

17. Barroso Ruiz, C., Desclaux, E. (2006), Les Insectivores (Mammalia, Insectivora) du Pléistocène Supérieur de la Grotte du Boquete de Zafarraya. In: Barroso Ruiz, C., de Lumley, H. (Eds.). *La Grotte du Boquete de Zafarraya, Málaga, Andalousie,* Consejería de Cultura (Andalucía), Sevilla, 979-997. Z, A; Barroso Ruíz, C., et al. (2006), Les Lagomorphes (Mammalia, Lagomorpha) du Pléistocène Supérieur de la Grotte du Boquete de Zafarraya. In: Barroso Ruiz, C., de Lumley, H. (Eds.). *La Grotte du Boquete de Zafarraya, Málaga, Andalousie*, Consejería de Cultura (Andalucía), Sevilla, 893-926. Z., A Barroso Ruíz, C., et al. (2006), Cadre biostratigraphique et géochronologique des dépôts quaternaires (Paléolithique supérieur ancient et Moustérien) de la grotte du Boquete de Zafarraya. In: Barroso Ruiz, C., de Lumley, H. (Eds.). *La Grotte du Boquete de Zafarraya, Málaga, Andalousie*, Consejería de Cultura (Andalucía), Sevilla, 519-532. A., P; Barroso Ruíz, C., et al. (2006), Signification Palethnologique des Restes Humains Néandertaliens et Sapiens de la Grotte du Boquete de Zafarraya: Taphonomie, Fracturation, Traces de Découpe, Combustion. In: Barroso Ruiz, C., de Lumley, H. (Eds.). *La Grotte du Boquete de Zafarraya, Málaga, Andalousie*, Consejería de Cultura (Andalucía), Sevilla, 1423-1480. P., A; Barroso, C., et al. (2006), Contexte paléoécologique, paléoclimatique et paléogéographique des Néandertaliens de la grotte du Boquete de Zafarraya. In: Barroso Ruiz, C., de Lumley, H. (Eds.). *La Grotte du Boquete de Zafarraya, Málaga, Andalousie*, Consejería de Cultura (Andalucía), Sevilla, 1127-1166. A., E., P; Lebreton, V., (2003), Estudio palinológico del sedimento de la Cueva del Boquete de Zafarraya. In: Barroso Ruiz, C. (Eds.). *El Pleistoceno superior de la cueva del Boquete de Zafarraya*, Consejería de Cultura, Junta deAndalucía, Sevilla, 149-161. E., A; Michel, V., et al. (2003), Geocronología del relleno de la cueva del Boquete de Zafarraya. In : Barroso Ruiz, C., de Lumlay, H. (Eds.), *El Pleistoceno superior de la cueva del Boquete de Zafarraya*. Arqueología Consejería de Cultura. Junta de Andalucía. Sevilla, Monografías nº 15, 113-133. D, A.; Michel, V., et al. (2006), Datation C-14, ESR, des niveaux moustériens de la grotte du Boquete de Zafarraya. In: Barroso Ruiz, C., de Lumley, H. (Eds.), *La grotte du Boquete de Zafarraya*, *Málaga, Andalousie*. Consejería de Cultura, Junta de Andalucía, Sevilla, T. I, 487-518.. D, A; Michel, V., et al. (2013), U-series, ESR and 14C studies of the fossil remains from the Mousterian levels of Zafarraya Cave (Spain): A revised chronology of Neandertal presence. *Quaternary Geochronology* 15, 20-33. D, P; Schwartz, J.H., Tattersall, I. (2002), *The Human Fossil Record, Vol. 1: Terminology and Craniodental Morphology of Genus Homo (Europe).* University of Chicago Press, Chicago, P; Wood, B. (2011), *Wiley-Blackwell Encyclopedia of Human Evolution*. Wiley-Blackwell, Hoboken. P; Wood, R.E., et al. (2013), Radiocarbon dating casts doubt on the late chronology of the Middle to Upper Palaeolithic transition on southern Iberia. *PNAS* 110 (8), 2781-2786.D, A

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