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THE HUMAN REMAINS OF THE SITE OF PAYRE (S-E FRANCE, MIS 7–5). REMARKS ON STRATIGRAPHIC POSITION AND INTEREST

ABSTRACT: Most of Neanderthal sites in Europe yielded only very small quantities of human remains. These often consist of resistant material, i.e. teeth and highly fragmented parts of the cranium and post-cranial skeleton. In southeastern France, the site of Payre, dated from MIS 7 and 5, illustrates this scarcity well. It has yielded 13 teeth and a fragment of parietal, spread all along the sequence. This paper is an attempt to characterize and discuss the stratigraphic context in which these human remains were found. In Payre, most remains were discovered close to each other in the level G, at the base of the sequence. The fact that such small and few remains were preserved inside karstic deposits is discussed in comparison with other sites in Europe: human deposition of bodies or carnivore actions. The situation at Payre is common during the Middle and Upper Pleistocene where no burials were attested.

KEY WORDS: Neanderthal remains – Bone dispersion – Post-mortem processes – Cave deposits – Middle Paleolithic – Ardèche – Payre – France

INTRODUCTION

Although urgently needed for the reconstruction of the anatomy of Neanderthals during the Middle and Upper Pleistocene in Europe, there are only a few sites which have yielded human remains. Moreover, most Neanderthal sites in Europe yielded only very small quantities of human remains. It has been estimated that until the present only about 300 individuals of this population have been recovered in Europe. The human remains consist rarely of entire bodies but most often of resistant material, i.e. teeth and highly fragmented parts of the cranium and post-cranial skeleton. These remains are what is left for studying anatomically the humans who peopled Europe during the Middle and early Upper Pleistocene. This limited amount of data is too limited for the identification of regional characters of the various Neanderthal groups. Moreover, these few human remains may not be equally spaced over the time Neanderthals occurred in Europe, which makes difficult to carry out paleontological studies.

However, in southeastern France, the Rhone valley and its immediate proximity, 8 sites yielded human remains of Neanderthals. The Abri Moula delivered several almost complete human remains dated to marine isotope stage MIS 5 (Defleur *et al*. 1994, 1999). The other sites only yielded a few human remains, especially teeth of various age: Orgnac 3 (Orgnac l'aven, Ardèche, MIS 9–8), Néron cave (Soyons, Ardèche, MIS 5–4), Abri des Pêcheurs (Casteljau, Ardèche, MIS 5–4) and Mandrin cave (Malataverne, Drôme, MIS 3) (Combier 1967, Giraud *et al.* 1998), and further south-east: Bau de l'Aubesier (Vaucluse, MIS 6–4), Lazaret (Alpes-Maritimes, MIS 6) (Lumley 1969, Buisson-Catil *et al*. 1994, Lebel *et al*. 2001, Lebel, Trinkaus 2002).

In the same geographical region, the long sequence of the site of Payre, dated to between MIS 7 and 5 represents a good opportunity for studying the human remains it yields. This paper is an attempt to characterize the stratigraphic context in which these human remains were found, and to relate them to the site and Neanderthal history.

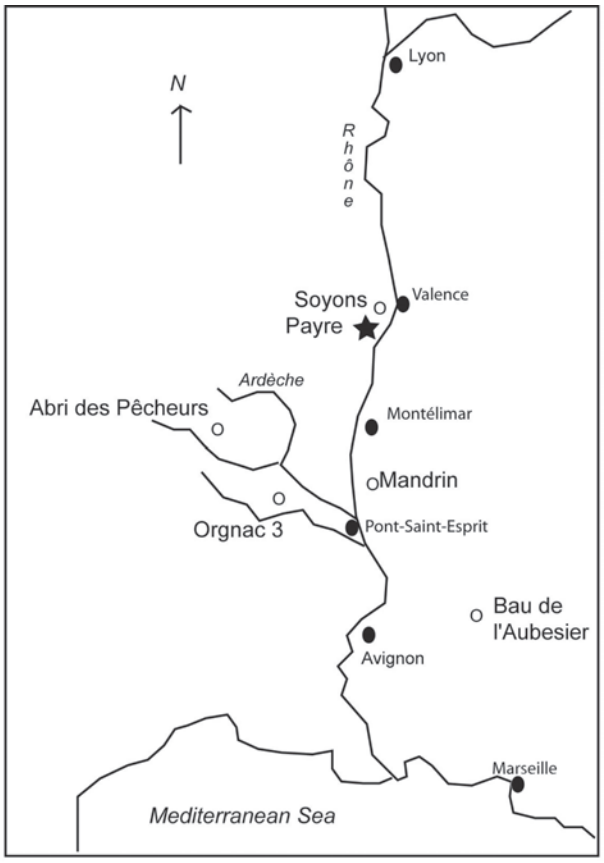

FIGURE 1. Location of the cave in southeastern France.

THE KARST OF PAYRE

Except for the base of Abri Moula and the Abri des Pêcheurs, MIS 7 and 5 sites are not well known in that part of France (Defleur *et al.* 1990, 1994, Evin *et al.* 1985, Masaoudi *et al*. 1994). The available data suggest that the Middle Rhone Valley has been continuously inhabited by humans, probably because it was situated far enough away from cold territories.

The site of Payre is situated 60 m above the Payre river, a small tributary of the Rhone river, on a cliff opening toward the southeast (*Figure 1*). Regular excavations have taken place throughout the terrace surface since 1990 (Combier 1967, Moncel 2003). The site is located in the Jurassic and Cretaceous complexes covering a large part of the right edge of the middle Rhone Valley (Debard 1988). It yielded a long sequence with different archaeological layers, numerous artifacts, and fauna remains (Debard 1988, Defleur *et al*. 2001, Moncel *et al*. 2002, Moncel 2004). Human remains, consisting of 14 teeth and a fragment of parietal, were discovered in the different archaeological levels (Moncel, Condemi 1996, 1997). They indicate that humans settled in this area close to Mediterranean world.

The 5 m thick sequence is composed of five main levels (G, F, E, D–C and B–A), each of them including sub-layers. 25 to 60 m² have been excavated down to the substratum, which makes it possible to draw the chrono and biostratigraphical framework of the site. U-Th and ESR dates were obtained on bones and teeth from the sequence and on the stalagmitic floor (Imbrie *et al.* 1984, Masaoudi *et al.* 1996, Moncel *et al.* 2002). TL dates are still unpublished (Valladas *et al.*, in press). The sequence (*Table 1*) includes:

– At its base, a stalagmitic floor on both sides of the cave, formed during MIS 8–7.
– A first deposit (level G, 6 stages, 80 cm), composed of orange clay and numerous stones and slabs, turning into brecchia. Most of the human remains were found in these layers, which corresponds to two main phases of human occupation.
– A second deposit (level F, 7 stages, 100 cm), consisting of a grey sediment and beds of rubble and clay with the same features, formed secondarily in the cave. It displays human occupations alternating with numerous animal ones, especially *Ursus spelaeus*. The rare pollens indicate a semi-forest environment with Mediterranean trends (Kalaï *et al*. 2001). The micro-faunal patterns present evidence of a colder and drier climate, but the species may have been selected by birds, or the bones leached during the sedimentary process (El Hazzazi 1998).
– Level E, rich in stones and large blocks, corresponds to an extended collapse of the cave ceiling at the beginning of the MIS 5 and opens the cavity. Pollens indicate a temperate environment.
– Levels C and D, which took place in open air under small shelters, represent the last period of sedimentation when the cave became increasingly opened. People still occupied the place during MIS 5. The surface levels A and B are composed of sediments from the local and active karst. They do not contain any archaeological remains.

The cave entrance and a large part of the cave have disappeared due to the slope erosion. Consequently, any archaeological assemblage lying around the entrance

TABLE 1. The Payre sequence and the human occupations.

Layers	Deposits	Human occupations	Ages	Location of human remains
A-B (50–70 cm)	Yellow sediment from the karst	?	<80 000 BP	
C-D (50–100 cm) *shelters*	Brown-red sediment with blocks 3 layers C–D1–D2+J?	Mixed occupations	MIS 5 ESR & U/Th	1 tooth No. 1
E (20 cm) E1 E2 E3	*Collapse of the cave ceiling* Brecchia with numerous angular stones	level E = upper part of the level F?	MIS 5 ESR & U/Th	1 tooth No. 29
F (100 cm) F1 F2 F3 F4 *cave* F5 F6 F7	Grey-brown sediment with lenses of small stones F3: thin sediment lense Stalagmites in formation	F1-F2 = Fa top of F3 = Fb F4-F5 = Fc F6-F7 = Fd	MIS 7 TL, ESR & U/Th	3 teeth No. 336 No. 717 No. 482
G (100 cm) G1 G2 G3 *cave* G4 G5 G6 ?	Orange sediment Stone and small slab beds, brecchia	G1 = Ga G2-3 = base Ga G4 = Gb G5 = Gb G6 = ?	MIS 7 TL, ESR & U/Th	*Ga*: No. 254,127, 344, 654, 633 1 fragment of parietal bone No. 335 *Gb*: Nos. 6, 237, 250, 731
H	Stalagmitic floor 7 beds		MIS 8–7 TIMS & ESR	
I	Brecchia	No human evidence		
Limestone substratum				

According to: Kalaï *et al*. 2001,
El Hazzazi 1998,
Desclaux, in Moncel *et al.* 2002,
Masaoudi *et al*. 1996,
Valladas *et al*. in press (MIS according to Imbrie *et al*. 1984).

of the cave is missing. The archaeological discoveries were made inside an area which was a large cave, whose limits are unknown. The large layers are separated by erosion phases in a karstic context. Sediments turned into brecchia, due to water percolation and post-depositional weathering. This could explain alteration observed inside flint artifacts, disturbance inside the pollinic rain and, above all, the disappearance of a large number of small bones. Taphonomic processes seem to have been deep inside the sediments (Bouteaux 2003, Dashek 2002, Julien 2003, Moncel *et al.* 2002). There is no evidence of roots, animal holes or recent burials.

Different archaeological sub-levels have been identified by the density of artifacts. They indicate that the site recorded several settlements, which appear now mixed inside the deposit and are sealed by the karstic sedimentation. Since caves were dens for animals, especially *Ursus spelaeus* during the Pleistocene, they may have disturbed human occupations (Stiner 2002). We assume that this happened at Payre, especially in the middle of the F level sequence, where *Ursus* remains are numerous, indicating that they occupied the cave frequently. In the other levels, animals like wolves and hyenas may have visited the cave, attracted by meat left by humans (Patou-Mathis, in Moncel *et al.* 2002). However, animal occupations do not seem to have deeply modified the archaeological layers, especially the oldest ones, which yielded a high density of animal and human remains and artifacts which display refitting inside each of the sub-levels. The material has not really been moved, especially at depth.

LOCATION OF THE HUMAN REMAINS IN THE SEQUENCE OF THE SITE

Human remains were associated with lithic artifacts and bone assemblages belonging to large mammals. The deepest deposits can be considered as the ground of the cave composed of large and flat blocks.

Human remains discovered in Payre are, for the most part, located in the oldest level G (MIS 7) that was set down inside a cave (Masaoudi *et al.* 1996) (*Table 2*). This

TABLE 2. List of human remains in Payre (Ardèche); squares: same individual; italics: perhaps same individual.

Levels	Square	No.	X	Y	Z	Nature	Year of discovery
D	N8	1	–	–	400	M1 lower left	1996
E	N8	29	23	31	449	P2 lower left	1997
F	I6	336	37	96	244	M1 lower right	2002
F	K7	717	89	22	360	P1 upper right	2001
F	L7	482	55	57	355	C upper right	1999
Ga	O8	254	32	64	499	P1 lower right	1995
Ga	P7	127	80	48	518	P2 lower left	1996
Ga	O8	344	99	86	510	P1 lower left	1996
Ga	N8	654	77	5	511	*M1-2 upper left*	1999
Ga	N8	633	45	50	507	C lower right	1999
Ga	O8	335	96	63	510	*Left parietal*	1996
Gb	Q8	6	40	60	530	M1-2 lower left	1994
Gb	P8	250	49	92	528	I1 lower right	1994
Gb	P8	237	89	10	528	I2 lower right	1994
Gb	M6	731	34	62	527–530	I lower right	1999

level yielded 9 teeth and one fragment of parietal. The human remains of level G were found close to each other, especially along the No. 8 area (squares O8 to Q8 and square P7) (*Figure 2*). They are grouped into two sub-levels located at the same depth as the layers which yielded artifact and bone remains identified by the spatial patterns. Four teeth belong to the oldest human settlement (sub-level Gb) and the six others, including the fragment of parietal, belong to the richest sub-level Ga. Most of them were discovered under large blocks coming from the ceiling collapse (*Figure 3*). Three teeth also lay close to each other in sub-level Gb.

The level F yielded 3 teeth, and one tooth was found in Level E and the upper Level D, respectively (Moncel, Condemi 1996, 1997, Moncel *et al.* 2002). The human remains of level F are located in the back of the cave, not far away from the northeast chamber walls whose limits are indicated by calcareous banks. The two teeth belonging to the levels E and D were discovered near the site border and the slope, as were the remains found in level G.

Level G

Level Gb

Four human teeth of the lowest level were located very close to the limits of the site, in a pile of blocks and slabs on an uneven cave floor due to collapse of the walls and ceiling. They were found well preserved, at the same depth (z = 530 and 528 cm), in two neighbouring grid squares (Q8 and P8) (*Figures 2* and *3*). They may belong to the same individual, a child about 7 years old. These teeth are two lower incisors, a right central and a right lateral one and a lower left molar (*Figure 4*). All are small in size, especially their mesio-distal diameter. The small size molar presents a crown which is complete; only the roots are broken. The incisors do not display a lingual tubercle that does not appear permanently on the European Middle Pleistocene teeth. Morphological features of these teeth are similar to those found in pre-Neanderthal sites as in La Chaise (abri Bourgeois-Delaunay) and also to those of the Neanderthals (Condemi 2001).

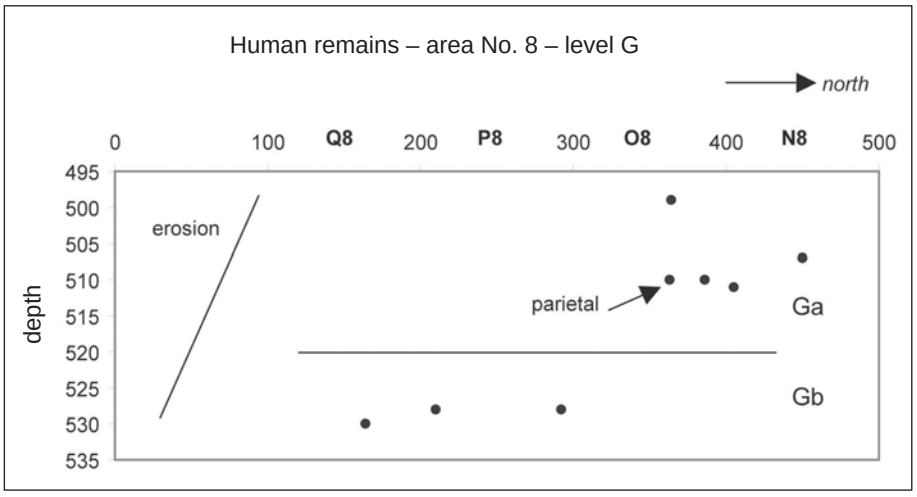

FIGURE 2. Location of the human remains along the area No. 8 in level G (sub-levels Ga and Gb).

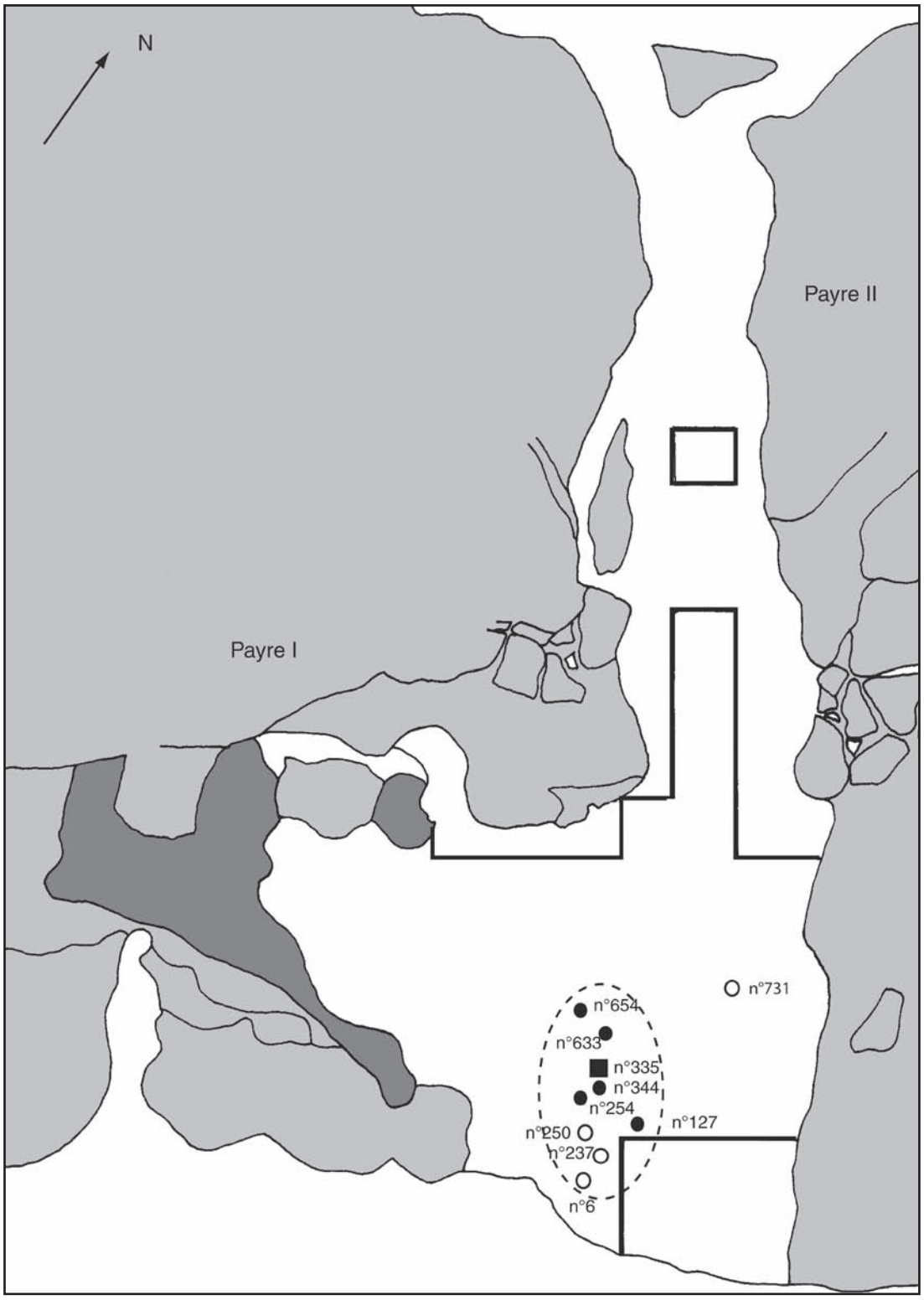

FIGURE 3. Location of the human remains inside the cave for the G level dated to MIS 7. Circles: teeth (black: Ga level, white: Gb level); square: parietal; grey areas: limestone formation; dark grey areas: stalagmitic floor, free by erosion.

Level Ga

All the remains were grouped in a limited sector, in front of the excavated area, close to the residual walls of the site. They were found also at the same depth (between 499 and 518 cm), scattered in three grid squares (P7, O8, N8) and may correspond to a same well-defined time span.

The four lower teeth, the upper tooth and the parietal bone fragment represent probably two or three individuals.

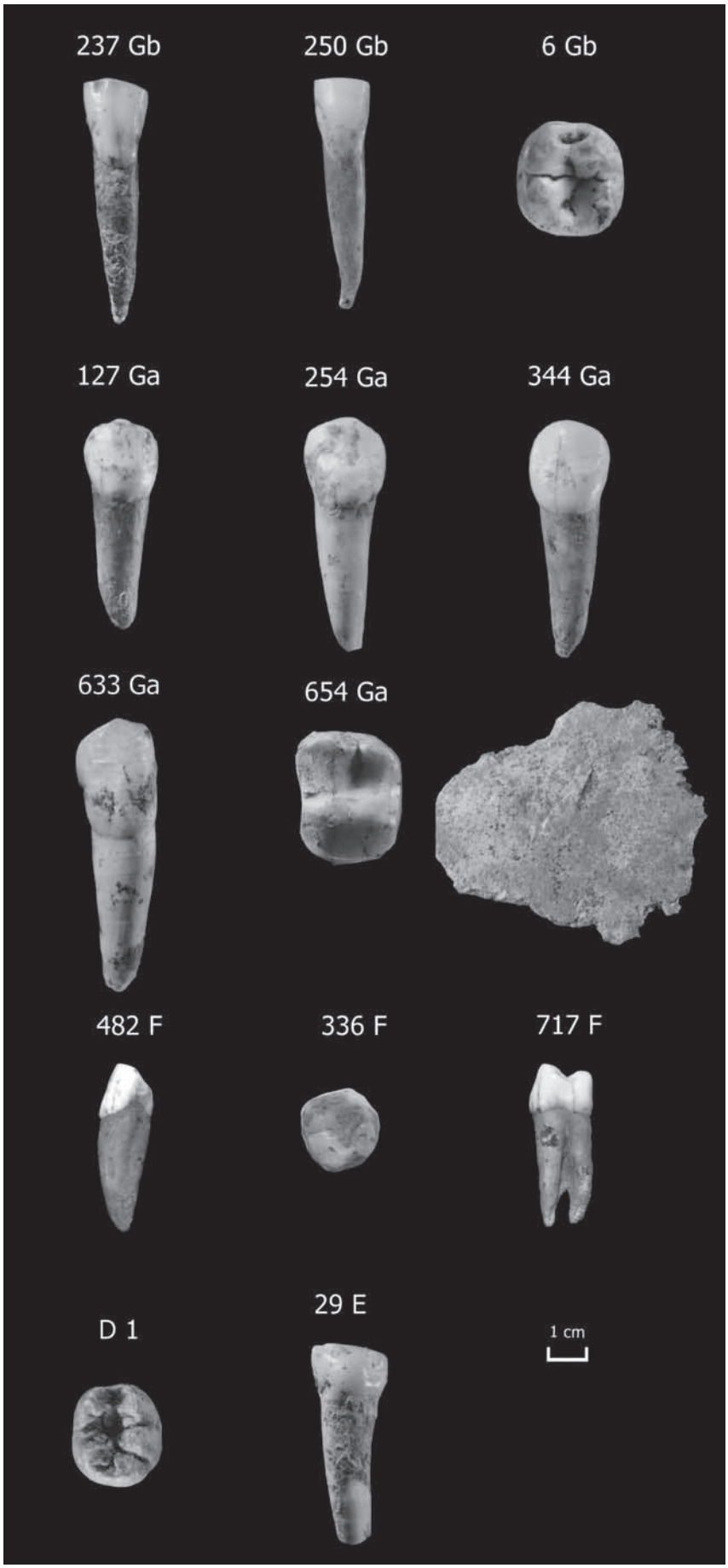

FIGURE 4. Some of the human remains at Payre (with number and level).

One individual could be represented by a robust upper molar, very worn. X-rays show a secondary deposition of dentine at the level of the roots, which corresponds to an adult. This molar morphology is similar to those of Neanderthals. This worn molar cannot belong to the same individual as the other teeth (*Figure 4*).

The four other teeth: a canine, the first two premolars and the second premolar, are complete and well preserved, and barely worn. They may belong to a young individual, and possibly a single individual. The right canine is large in size. On the vestibular surface the tooth presents linear hypoplasia on the enamel. On the lingual face there is a lingual tubercle which is well individuated, but without much volume. The first premolars are slightly smaller than the canine. The two premolars display a distal hump which gives the tooth an asymmetrical appearance when it is observed in the occlusal perspective. This asymmetry is displayed on a large number of Neanderthal first premolars. It is absent on modern human ones. Their morphology and size (MD and VL diameters) make them resemble those of pre-Neanderthals (La Chaise, abri Bourgeois-Delaunay BD1, for example) and of the Neanderthals (Le Regourdou, for example). The Payre canine is larger than that of average present-day humans. The fragment of parietal bone which corresponds to the asteriac corner on the left side, represents also a young individual, but not necessarily the same whom the lower teeth belong to.

Level F

The three teeth discovered in Level F are very well preserved: a canine, a premolar and a molar. The canine is very large and its roots reached its maximum growth, but it is not entirely closed (*Figure 4*). On the lingual border, there is a well delimited tubercle, frequent on Neanderthal canines. The right first premolar is of large size too and displays a convexity of the vestibular face and a verticality of the lingual face. These two features are similar to those of Neanderthals, and their size falls in the upper range of variability of Neanderthal ones, at the limit of present-day variability. Their degree of wear, the closing of their roots and their morphology suggest that they belong to the same individual, about 12 years old. They were located at the same depth (z=360 and 355 cm) in two neighbour grid squares (K7 and L7), at the base of the lens F1.

The lower left molar, probably M, is small with four tubercles, short in height. It displays occlusal wearing on the tooth. The robustness of the crown makes it possible to include this molar into the small sized Neanderthal teeth. This tooth probably belongs to another, slightly older individual. It has been found in a separate grid square (I6), at a depth of 244 cm corresponding to the top of the lens F1.

Level E

This unit yielded a lower left robust premolar of a young adult. It is rather worn out, and the apex of the vestibular cuspid has completely disappeared (*Figure 4*). The occlusal surface of this tooth is nearly horizontal, and its crow falls within the range of variability of Neanderthal ones. Since this unit is composed of an accumulation of blocks at the top of level F, it may correspond to a phase of large scale dismembering of the cavity. The archaeological material may result from a superficial reworking of the top of the underlying unit F, and not from any human occupation.

Level D

The tooth is a lower right M1; its crown is complete (*Figure 4*). The root has just begun to grow. It was that of a young child. Its dimensions fit within the range of variation of Neanderthals. Its stratigraphical position suggests its ancient age since it was lying near the surface, in a sector of erosion. The cave of Payre III, just below the Middle Paleolithic sequence, has yielded indices of Chalcolithic occupations. Although the stratigraphic position of this tooth led us to doubt that it belongs to a young Neanderthal child, the low disturbance of the level D and the fact that no fragment of pottery or actual animal species have been discovered inside the sediments leads us to conclude that this human tooth certainly belongs to the deposit.

The human remains at Payre are almost exclusively represented by children and teenage specimens. Many teeth belong to 6–9-year-old individuals, corresponding to what can be observed in Middle Pleistocene sites. When samples are large enough, both large and small teeth are represented. Only the human teeth from Krapina (Croatia) stand apart, although they are within the size range of the Neanderthal teeth, they all show relatively large dimensions (Wolpoff 1978, Condemi 2001).

DISCUSSION

What explains the human remains in Payre?

In Payre, it is to be recalled that the human remains were found in a karstic cavity and that the filling of such cavities follows depositional patterns, the complexity of which we are just beginning to understand. Animal occupations which may have been of short duration occurred after human occupations of variable duration. Animal occupations are attested by some traces of wolves and hyenas which were attracted by the garbage left behind by humans, as well as dead bears. Some of the animal occupations may also have lasted over longer periods, since the bear remains suggest that the cave was regularly used as a den, especially in Level F.

The human remains, which can belong to the same individual or two individuals in each level, were mixed with the material of human settlement and several questions can be asked:

1) Are they directly contemporaneous to the human occupation?
2) Were they mixed during a post-depositional period, the remains coming from another part of the cave?
3) Do they result from carnivore activity, as it was shown in sites in Europe and Middle Eastern caves (Stiner 2002)?

TABLE 3. Context of human remains in some case sites. The various modalities of deposition proposed by the authors are given.

Human bones showing particular treatment	Primary position	Primary sepulchre	Kébara Tabun Shanidar La Chapelle-aux-Saints
		Sepulchre and/or cannibalism	Abri Moula Krapina Marillac
		Corpses thrown in avens	Sima de los Huesos
	Reworked by karstic processes and by occupation	Sepulchres or others	Amud 3?
Human bones without traces of particular treatment	Reworked by carnivores (hyenas, wolves)	Left over in protected places	Guattari Sclayn
		Left over among rejects	Artenac Krapina Lazaret Biache-Saint-Vaast Payre
	Accidental death by falling down or due to collapsing of blocks		Hortus Altamura
	Shifting by natural processes		Banyolas Steinheim

Results of faunal analysis help interpret the human remains deposited inside the site:

– The human remains may correspond to one or two human corpses left inside the cave, disturbed or not by further human settlements and carnivores, and by post-depositional phenomena. These remains may or may not be the residues of consumption by humans. An area located far from the cave entrance may have been a suitable place for depositing human corpses regardless of the subsistence activities in which the contemporary population was engaged. This explanation has been proposed by Carbonell, Condemi, Lumley and Trinkaus for Atapuerca, La Chaise, Hortus and Bau de l'Aubesier (Carbonell *et al*. 1995, Condemi 2001, Lumley 1972, Lebel *et al*. 2001). It would be the case for level G, the oldest and richest archaeological level. This assemblage is in a large part the result of human occupation and not disturbed by carnivores. The location where the remains were found explains the accumulation of human remains.
– The human remains were brought into the cave by hyenas or other carnivores (Guattari cave in Italy, Giacobini, Piperno 1991, Piperno, Giacobini 1990–1991, White, Toth 1990–1991). The cave was an attractive spot for carnivores, in view of the meat residues left by humans and by the corpses of *Ursus spelaeus*, whose death frequently followed winter hibernation (Moncel *et al*. 2002). The scattering of the human remains by bears and carnivores may explain the location of the remains in the levels F and D. Large animal settlements are now well described for these levels.

Is Payre similar to other Neanderthal sites which yielded human remains?

A comparison of the sites (*Table 3*) which have yielded human remains has led to the formulation of different hypotheses depending of the taphonomy of the sites: human bodies/corpses intentionally thrown together by prehistoric people (Sima de los Huesos), remains in a sepulchral context (Shanidar in Irak, Tabun and Kebara in Israel …), fragments of bones dispersed either due to their location in hyena dens (Sclayn in Belgium, Guattari in Italy), or due to their consumption by other people (Abri Moula in France, Krapina in Croatia) or because of their location in human settlements disturbed by factors that cannot be always exactly identified (in France, Spain and Czech Republic: Artenac, Banyolas, Bau de l'Aubesier, Biache-Saint-Vaast, Brèche de Genet, Gran Dolina, Fontechevade, Hortus, Kůlna, Lazaret, Néron, Orgnac 3, Abri des Pêcheurs) (Vallois 1958, Lumley 1969, 1972, Lumley M. A. 1973, 1987, Trinkaus 1985, Tuffreau, Somme 1988, Valoch 1988, Giacobini, Piperno 1991, Carbonell *et al.* 1995, Andews, Fernandez Jalvo 1997, Patou-Mathis 1997, Otte *et al*. 1998, Defleur *et al.* 1999, Bocquet-Appel, Arsuaga 1999, Delagnes *et al.* 1999, Lebel *et al.* 2001, Lebel, Trinkaus 2002).

Payre most likely corresponds to the latter case. The type of infilling and the strong compaction of the layers in all the human settlements of Payre, do not allow a determination of occupation phases, except in the basal levels. The upper unit (Level D) has been severely reworked under the surface. In Levels G and F, archaeological beds of 20 to 30 cm in thickness are visible (Moncel 2003). These beds may represent a superposition of several occupations, perhaps during "close" lapses of time, only

slightly disturbed. Refittings are always processed within each of these archaeological beds (Moncel *et al.,* in prep.). The edges of the lithic artifacts are sharp, and the broken or anatomically connected bones have been observed directly on the cave ground, composed of numerous blocks. Besides this, several human teeth, belonging to a same individual, have been found in Levels Gb and Ga, as well as in two units of Level F. They were at an even depth, under blocks that collapsed from the cave ceiling and scattered over two or three adjoining grid squares. Therefore, if the material had been moved by animal or post-depositional phenomena, it would have been done at shallow depth (corresponding to the floor surface of the cave) and during a short period of time, through a process of mass sliding of the material embedded in the matrix.

How to explain so few and so small human remains?

The human remains found at Payre are all located near the residual walls of the cave. Slope erosion resulted in the collapsing of the cavity walls and ceiling. For this reason all the occupation floors located at the entrance of the cave have disappeared. Given the type of human remains, which have been recovered (teeth and parietal fragment), other remains were probably present in the site but have been eroded since, for example mandibles or skull. All the remains are small and light, and the parietal bone fragment display ancient breaks. Except for the upper molar, all the teeth have one root only. We can consider that these teeth may have fallen from a mandible post-mortem, if it was previously exposed over a long period (dried bone) after being brought or reworked by carnivores like hyenas before or after human occupations, as in Guattari or in Sclayn. In Sclayn in Belgium, human remains have even been discovered in sterile layers (Otte *et al.* 1998), in Guattari in Italy, in a hyena den (Giacobini, Piperno 1991). The teeth, due to their small size, may have been stuck up between and below the blocks on the floor, whereas bigger bone pieces like mandibles possibly bearing other multi-rooted teeth, might have slipped more easily along the erosion slope.

Other human remains may have been mixed with the thousands of undetermined bone fragments collected in all the levels. The intense breakage of the bones for mellow consumption was shown by archaeozoological analyses (Daschek 2002, Julien 2003). The fauna analysis shows that numerous small bones certainly disappeared by post-depositional phenomena. However, we have no evidence of a post-cranial skeleton of these one or two individuals in each level. The remains were also not discovered in more protected places such as Artenac, Lazaret or La Chaise-Abri Suard (*Table 3*), and there is no evidence of burials, as for example in La Ferrassie or La Chapelle-aux-Saints in France (Boule 1911–1913, Heim 1976). Moreover, in Payre there is no evidence of cut marks on the parietal bone, which could prove a first treatment by humans, as in Marillac, Hortus, Abri Moula or Krapina (Lumley 1972, Vandermeersch 1976, Le Mort 1988, Defleur *et al.* 1999).

In most of the sites, the human remains result from several human occupation phases, stretching over a long time span. In our opinion, the marked homogeneity of the remains at Krapina suggests an accumulation during a very short time span, representing a single occupation by the same human group (Wolpoff 1978, Condemi 2001). This proposition may be supported by the high density of human remains found in this site, related to cannibalism during short occupations (Trinkaus 1985, Ullrich 1978, 1986). The site of Abri Moula (Middle Rhone valley, southeastern France) seems to represent the same situation. This site, a few kilometres away from Payre, in the same topographic setting, yielded many human remains including several skeletal parts, all found in the same layer and displaying cut marks (Defleur *et al.* 1999). In Abri Moula, while the type of occupation is similar (raw material collecting, core reduction sequences, tool types), the treatment of human remains differs by the number and type of activity (cut marks, percussion impact scar, anvil striae, indicating percussion, filleting, crushing and peeling on human remains related to cannibalism and not preparation for secondary burial) (Defleur *et al.* 1999). At present, the data obtained at Payre lead us to assume that the occupations were spread over a long period of time. Does this mean that human groups of different traditions occupied the same region, or were the functions of the two sites different?

From 90,000 years ago onward, when the Neanderthals deposited dead bodies in protected places, sometimes considered sepulchres, the preservation of almost all skeletal bones was possible (Hovers *et al.* 2000). In most older Neanderthal sites, as in Payre, often only teeth and occasionally bone fragments were found. When human remains are rare, it is assumed that carnivore fragmentation is responsible for bone dispersion, and the state of preservation is usually related to the complex record of karstic deposits. The low density of human remains in this site is in agreement with observations made in most of the other European sites between MIS 7 and 5.

CONCLUSION

The large concentrations of human fossils at Krapina, Abri Moula and La Simas de los Huesos are exceptions which offer enough remains to be studied statically. The study of human remains in Payre shows that a small number of remains is consequently a problem for the study of ancient populations and for characterizing possible regional variations. The site of Payre illustrates well this scarcity. The comparison of the position of Payre with other sites shows that Payre situation is common during the Middle and Upper Pleistocene where no burial or other specific human accumulations are attested.

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