

## CHAPTER XXI

**INTENTIONAL BURIALS AT SPY?****Bruno MAUREILLE, Michel TOUSSAINT & Patrick SEMAL****Abstract**

*The discovery in 1886 of human remains at Spy was a great step forward in the scientific recognition of Neandertals. The Spy fossils were found during an organised excavation campaign and, for the first time, they were in association with an archaeological context that could be considered as reliable. However, although they observed certain anatomical connections and determined the position in anatomical connection of one of the two specimens, the discoverers of the Spy I and Spy II fossils refuted the idea of the existence of intentional burials.*

*Following a brief reminder of the historical context of these discoveries, we shall discuss whether these deposits were or not intentional. We shall go by the known elements regarding the site, its stratigraphy, the conditions in which the fossils were found, and by the updated interpretation of the archaeological data thanks to the tools of Archaeoanthatology, new direct radiocarbon dates and a comparison with the Middle Palaeolithic and Middle to Upper Palaeolithic funerary deposits known in Western Europe.*

*We believe that an intentional primary earth burial is the most parsimonious hypothesis to explain the presence of the Spy II remains. It is more difficult to give an opinion for Spy I, though we also favour this same hypothesis.*

**INTRODUCTION**

It is difficult to go back on finds that were made at the end of the 19th or the beginning of the 20th century to discuss so delicate a question as the existence of an intentional burial, in other words a voluntary funerary activity.

Recent interdisciplinary research made on the Spy collections and presented in this monograph gave many new results. Although it was not possible to give the reasons for such a preservation of the skeletal remains of Spy I and Spy II (*cf.* Rougier *et al.*, this volume: chapter XIX), a dating was obtained around 36,000 BP for both adults (Semal *et al.*, 2009, volume 1: chapter XVI).

Therefore, to discuss the question of the existence of Neandertal burials at Spy, we went back to the available data and the context of the site as we understand it today. We tried to analyse them from the point of view of the Archaeoanthatology data (Duday, 2009) and the chrono-cultural environment in Western Europe,

and more precisely in comparison with the Middle Palaeolithic and Middle to Upper Palaeolithic transition sites where human remains were found associating cranial and infra-cranial material.

**A DIFFICULT HISTORICAL CONTEXT**

When Spy I and Spy II were discovered in 1886, they aroused immense scientific interest. They were at that time the most complete Neandertal fossils, along with Neandertal 1, and the only ones with their cranium and mandible in association. Moreover, they were the first human fossils clearly found in stratigraphic position. This discovery also took place within a given historical and scientific context. If it is somewhat difficult today to put one's self back in the cultural, scientific and philosophical context of the end of the 19th and the beginning of the 20th century, it is most likely that the researchers' personal beliefs played their part as to the interpretation of the data. De Puydt, Lohest and Fraipont had become transformists (Lohest *et al.*, 1925; Semal *et al.*, volume 1: chapter II). At the

time, the Neandertals were considered as a “primitive” human form (Figure 1; Schaaffhausen, 1858; Pruner-Bey, 1866; Virchow, 1882), and for the most ardent evolutionists, they were the best candidates as intermediates between anatomically modern humans and the great apes (Lohest *et al.*, 1925; Trinkaus & Shipman, 1996).

In this context, no one imagines that Neandertals could have symbolic preoccupations. For the same reasons, King (1864) proposes to classify Neandertals in a different species from ours: *Homo neanderthalensis* King, 1864.

Fraipont & Lohest (1886, 1887) consider the possibility of burials for Spy I and II, but reject it. The discoverers put forward arguments as to the sedimentology (De Puydt & Lohest, 1886: 894) and the taphonomy, such as the spatial distribution of the remains in relation to one another. This approach is an exception at the end of the 19th century, and their description is not influenced by the will to prove the existence of a burial. The Marquis of Nadaillac, on the other hand, as from 1886 clearly mentions the idea of a burial for the Spy fossils (de Nadaillac in De Puydt & Lohest, 1886; de Nadaillac, 1888). However, it is only thirty years later, and after the dis-

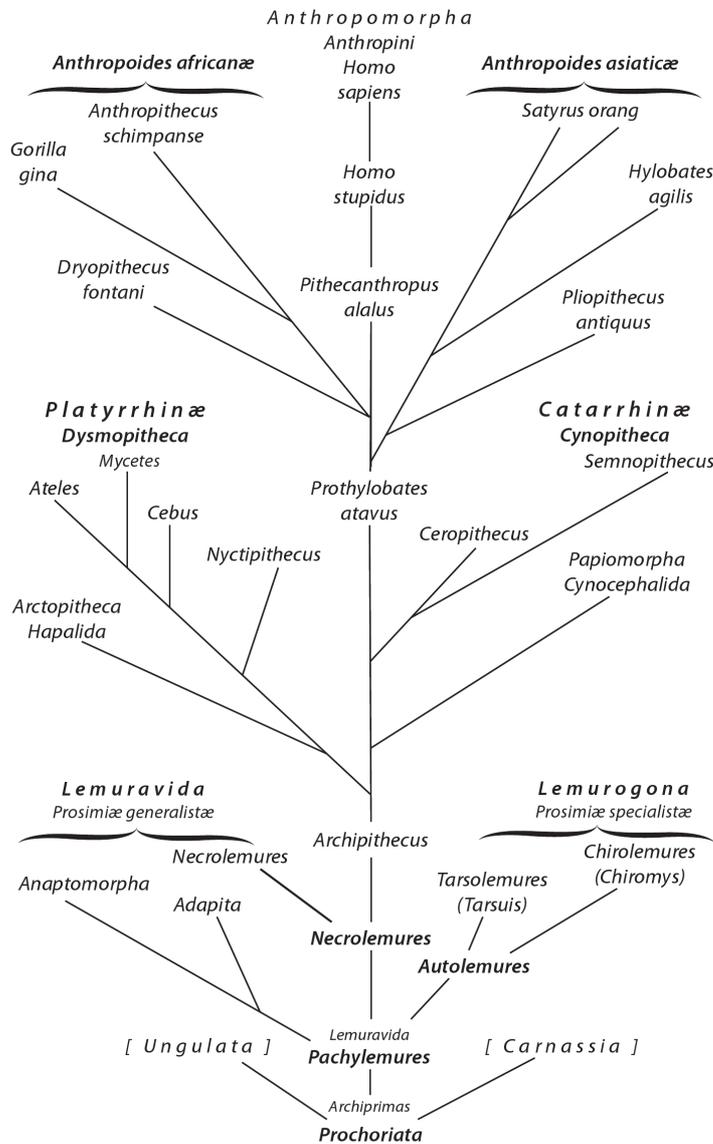


Figure 1. Reproduction of the Primates genealogical tree of Haeckel (after Haeckel, 1909).

covery of the La Chapelle-aux-Saints 1 fossil, that the existence of Neandertal intentional burials will be discussed (Bouyssonie *et al.*, 1908).

### **THE DISCOVERY CONTEXT: STILL VERY POOR DATA**

In June 1886, the digger A. Orban identifies human remains in the lower “fauna-bearing level” (FBL) that spreads under the terrace. He then writes to M. De Puydt and waits for instructions (*cf.* Cammaert, volume 1: chapter IV). We must emphasise that A. Orban identified the nature of these bones in very difficult digging conditions (Semal *et al.*, volume 1: chapter II). On July 11th 1886, a minute authenticates the discovery (De Puydt & Lohest, 1887; Semal *et al.*, volume 1: chapter II). This minute states the position of the Neandertal remains and describes the litho-stratigraphy and the archaeo-stratigraphy of the filling of this part of the terrace.

The discoverers describe the fill from bottom to top (see also Pirson *et al.*, volume 1: chapter VI). The human remains belong to the lower FBL and are located under a red coloured tufa, the second FBL. Therefore, from the stratigraphical point of view, both individuals come from the same level and this is the only possible interpretation (see also d'Acy, 1888).

Regarding their spatial distribution, the skeletons are about two to three metres apart. Fraipont & Lohest (1887: 663) roughly place on the section the position of one of the discoveries with the indication “Human bones and knapped flints” (figure 10 of their publication, our translation). This description allowed the possibility to attempt to reset them on the plan of the cave and the terrace (Figure 2; see also Defleur, 1993: 109, figure 25).

As there is no precise plan, nor photographs, the main observations on the location of the skeletal remains are given by Fraipont & Lohest (1887: 662, our translation): “We have been able to give the precise location of Spy no. 1. It laid across the axis of the cave, head to the east and feet to the west. It laid on its side, its hand against the lower jaw. The latter was broken along the symphysis; a phalanx of the hand was caught

in the middle of the fracture; a clay tufa had reunited the whole. [...] The fact that the bones were imbedded in a very hard layer eliminates any risk of a hoax. We ourselves tried to extract a humerus and despite our greatest precautions we could not get it out intact” and by De Puydt & Lohest (1887: 229, our translation): “the second skeleton that we shall call ‘Spy no. 1’ seemed to be laying on its right side, its hand against the lower jaw. [...] It was placed more or less across the axis of the cave, its head to the east, the feet to the west. Many bones were not found despite minute research. The skull was fractured. Many of the fractures were very old, pieces that were no longer in anatomical connection had been reunited by limestone incrustations”.

Regarding the second individual, the scattering of the bones of Spy no. 2 on the terrace is borne out by a letter from A. Orban to M. De Puydt (Dallemagne archives, undated letter; see Cammaert, volume 1: chapter IV). Therefore, the remains of Spy no. 2 (Spy I) were scattered over a large surface, whereas some of those of Spy no. 1 (Spy II) were found in articulation. Nevertheless, many bones are still missing despite the efforts of the discoverers.

### **SPY I AND SPY II: ACCIDENTAL DEPOSITS OR DELIBERATE GRAVES?**

For over thirty years, Archaeoanthatology has made much progress (Duday, 2009). It is now possible to appreciate the intentional, anthropic nature of the preservation of human skeletal remains in a site, whether or not in anatomical connection. This progress is based on a methodology that must be set as from the excavation. However, the relevance and degree of resolution are such that, even without a direct field survey, it is sometimes possible to reinterpret old cases (e.g. Maureille & Van Peer, 1998). Unfortunately, in the case of the Spy discoveries, the data are so poor that it is impossible to apply this methodology.

#### *Excavators' observations*

We have to remember that for the Upper Pleistocene periods, it has often been emphasised that there can be no “burial without a skeleton, and conversely, the presence of a skeleton is

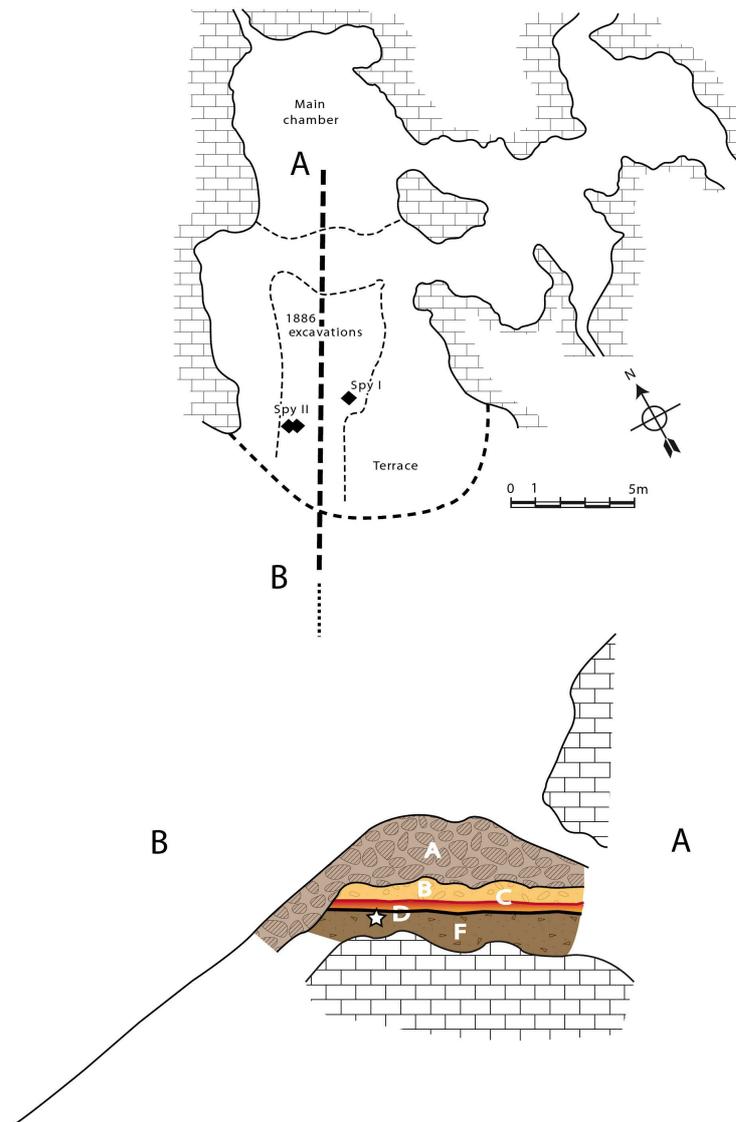


Figure 2. Plan of the Spy cave: view of the zenithal plan with the possible position of the two burials (top) and view of the profile published by Fraipont & Lohest, 1887 (bottom).

exceptional without a burial. [...] Indeed, for a skeleton to be preserved with its bones in anatomical connection, the body must have been protected from predators and scavengers or else their action would have quickly dismembered it and scattered the bones” (Vandermeersch, 1995: 17, our translation).

The comparison between the observations made at Spy during the discovery of the skeletal remains of Spy I and II (Table 1) with the known data on Neandertal burials in Western Europe and their archaeological context, leads us to the hypothesis for Spy II of a primary indi-

vidual earth burial. The diggers' observations show that they could determine the position of several of the Spy II bones, including the head and the feet. This position would partly respect the general anatomical organisation of a body.

It is very likely that the particular conditions of discovery of Spy I were not favourable for its anatomical representation such as we know it. This has also been the case for more recent finds than those of Spy, and undertaken in better conditions and by Prehistorians. We have in mind the Bouyssonie brothers and the find of La Chapelle-aux-Saints (Bouyssonie *et al.*, 1908, 1913) or J.-L.

<i>Individuals after Fraipont &amp; Lohest (1887)</i>	<i>Layer yielding the human remains</i>	<i>Excavator observations</i>	<i>Evidence of labile anatomical connections</i>	<i>Bone preservation</i>	<i>Evidence of scavengers</i>	<i>Stratigraphical data (relatively to the red brecciated "C" layer)</i>	<i>Chronological data (absolute dating)</i>
SPY I Second discovered	D	Poorly represented skeleton Right decubitus (?)	Yes	Very good	No	Below	Contemporaneous of the "C" layer remains
SPY II First discovered	D	Scattered bones	No	Very good	No	Below	Contemporaneous of the "C" layer remains

Table 1. Main taphonomy elements concerning the Spy I and Spy II fossils.

Capitan and D. Peyrony and the discovery of La Ferrassie 1 (Capitan & Peyrony, 1910; Peyrony, 1921, 1934) or also the find of La Quina 5 and the excavations of L. Henri-Martin (Martin, 1923). It is therefore possible that the present representation of Spy I does not convey what really existed before the bones were unearthed.

#### *Evidence of scavengers*

We know that scavenging carnivores were present at Spy (Fraipont & Lohest, 1887: 664). They are even quite abundant in the palaeontology collections from the levels contemporaneous or underlying the human remains. Many animal bones show traces of scavenging and/or regurgitation (Germonpré *et al.*, volume 1: chapter XV). The new examination of the bone elements from Spy I and Spy II does not allow any suspicion of traces due to the action of scavengers (Fernández Jalvo & Andrews, pers. com.). Besides, the discoverers agree that the preservation of the Spy I and Spy II bodies was impossible without a rapid burying (Fraipont & Lohest, 1887: 721). As they reject the idea of a burial, their hypothesis is that the cave's ceiling caved in, as supported by the presence of large blocks in the sediment of the terrace.

#### *The Archaeothanatology: connections and preservation*

Preservation of the anatomical connections between the various elements of an individual's skeleton is usually the result either of a very rapid burying due to particular sedimentological processes or of a specific anthropic action

such as an earth burial. We know however that non-funerary anthropic actions and/or natural processes can also explain a very good preservation of fossil skeletons.

Several major discoveries can be linked to natural or non-funerary anthropic processes. At Dmanisi (Gabunia *et al.*, 2001) or west of Lake Turkana (KNM-WT 15000) and in various sites where Australopithecine remains were found (Afar depression, Sterkfontein), the preservation of hominin skeletons is due to various geological and sedimentary contexts. The two specimens of *Australopithecus sediba* (Berger *et al.*, 2010) found in anatomical connection, including labile articulations, are a very good illustration of this fact. At Altamura, the individual's likely fall in a sinkhole explains the presence of this near-complete skeleton without any anatomical connection (Pesce Delfino & Vacca, 1994). At La Sima de los Huesos (Bermúdez de Castro & Nicolás, 1997), the presence of 32 exceptionally well preserved Pre-Neandertals is the result of the deposit, maybe intentional, of the bodies in a karstic cavity (e.g. Bocquet-Appel & Arsuaga, 1999; Carbonell *et al.*, 2003). Their bone remains were subsequently submitted to a secondary displacement due to natural processes (Bischoff *et al.*, 1997). At Gran Dolina (Carbonell *et al.*, 1995), the very good skeletal representation of *Homo antecessor* seems the result of cannibalism (Fernández-Jalvo *et al.*, 1999). No scientist suspects the existence of funerary gestures for any of these finds given their archaeological context, except maybe at La Sima de los Huesos (Carbonell *et al.*, 2003).

<i>Fossil identification</i>	<i>Year of the fossil discovery</i>	<i>Associated calvaria and mandible of the same individual</i>	<i>Infra-cranial bones of the same individual</i>	<i>Bone preservation</i>	<i>Anatomical bone connections identified during the discovery</i>	<i>Hypothesis of a deliberate burial during the discovery</i>	<i>Age-at-death*</i>	<i>Evidence of physical disabilities or biological limited mobility</i>	<i>Site function</i>	<i>Lithic techno-complex</i>	<i>OIS</i>	<i>Absolute dating (BP): human remains (F), layer (N)</i>	<i>Absolute dating method</i>
Germany													
Neandertal 1	1856	No	Yes	Very good	No	No	Adult	Yes	?	?	3	F = 39,900 ± 620	C14
Belgium													
Spy I	1886	Yes	Yes	Good	No	No	Adult	No	Camp site?	End of MP or MUP transition	3	F = 35,810 +260 -240	C14
Spy II	1886	Yes	Yes	Good	Yes	No	Young Adult	No	Camp site?	End of MP or MUP transition	3	F = 36,350 +310 -280	C14
France													
Le Moustier 1	1908	Yes	Yes	Very good	Yes	Yes	Adolescence VI	Yes	Camp site	Mousterian of Acheulean tradition	3	N = TL: 42,500 ± 2,000; ESR/LU: 41,000 ± 2,600; ESR/EU: 39,700 ± 2,400	TL, ESR
La Chapelle-aux-Saints 1	1908	Yes	Yes	Very good	Yes	Yes	Adult	Yes	Camp site?	Levallois	5?	N = unacceptable	ESR
La Ferrassie 1	1909	Yes	Yes	Very good	Yes	No	Adult	Yes	Camp site	Levallois	5?	-	-
La Ferrassie 2	1910	Yes	Yes	Very good	Yes	No	Adult	?	Camp site	Levallois	5?	-	-
La Quina 5	1911	Yes	Yes	Very good	Yes	No	Adult	Yes	Camp site	Quina	4?	-	-
La Ferrassie 3	1912	No	No	Good	?	No	Childhood V	?	Camp site	Levallois	5?	-	-
La Ferrassie 4	1912	Yes	Yes	Very good	?	No	Infancy I	Yes	Camp site	Levallois	5?	-	-
Le Moustier 2	1914 / 1996	Yes	Yes	Very good	Yes	Yes	Infancy I	Yes	Camp site	Levallois	3	N = 40,300 ± 2,600	TL
La Ferrassie 5	1920	Yes	Yes	Very good	?	Yes	Childhood V	Yes	Camp site	Levallois	5?	-	-
La Ferrassie 6	1921	?	Yes	Good	Yes	Yes	Childhood III	Yes	Camp site	Levallois	5?	-	-
Regourdou 1	1957	No	Yes	Very good	?	Yes	Young Adult	Yes	?	Discoidal Mousterian	5	-	-
Roc de Marsal 1	1961	Yes	Yes	Very good	Yes	Yes	Childhood V	Yes	Camp site	Levallois + Typical Mousterian	5	-	-
Châteauneuf 2	1963 ?	Yes	Yes	Good	?	No	Childhood V	?	?	Quina type Mousterian?	?	-	-
La Ferrassie 8	1973	Yes	Yes	Very good	No	Yes	Infancy II / Childhood III	?	Camp site	Levallois	5?	?	-
Saint-Césaire 1	1979	Yes	Yes	Medium	Yes	No?	Adult	Yes / No	Camp site	MUP transition	3	N = 36,300 ± 2,700	TL

\* Infancy I: birth to 1 yr, Infancy II: 1 yr to 2 yrs, Childhood III: 2 to 4 yrs, Childhood IV: 4 to 7 yrs, Childhood V: 7 to 11 yrs, Adolescence VI: 11 to 16 yrs, Adolescence VII: 16 to 20 yrs (after Sempé *et al.*, 1979).

Table 2. Inventory of the Western European Neandertal remains often considered as funerary deposits or associated in all certainty elements from the cranial and infra-cranial skeleton.

At Spy, the discoverers also put forward “catastrophic” events (Fraipont & Lohest, 1887: 721-722). The observations made by M. De Puydt and M. Lohest lead us to suppose that the Spy II skeleton showed bone connections characterised by labile articulations (see also Creve-

coeur, this volume: chapter XXVII), as they were able to observe the position of the head and feet, as well as the specimen's position in a right lateral decubitus. The position of the hand near the head could just have been deduced from the presence of a phalanx between the two

parts of the mandible. Fraipont & Lohest (1887: 721-722) propose the hypothesis of violent death due to a quick burying following a rockslide, but none of the archaeological data the researchers published supports this hypothesis. De Puydt & Lohest (1887: 229, our translation) also write: “we saw that limestone blocks of several cubic metres in volume fell on the terrace. This rockslide probably caused the breaking-up of the skeletons”. The described rockslide process seems to have taken place way after the deposit of the level containing the Neandertal remains, and would correspond to the collapse of the cave porch. De Puydt & Lohest (1886: 894) also mention that the bones were under a very hard breccia and not under the fallen rocks. We consider that the following elements: 1) the bodies' decomposition, 2) the nature of the site with fallen rocks on top of all the sedimentological filling of the actual terrace, 3) Orban's excavations, 4) the written works of Fraipont & Lohest (1887), and 5) the nature of the sediments in the “fauna-bearing levels”, do not give clear indications of a rockslide that would have buried the two bodies 2.5 m apart from each other.

Let us recall that for none of the subsequent finds of near-complete Neandertal specimens in Europe (Table 2), has it been scientifically proven that the preservation of the bones was the result of sedimentological processes. This was a supposition, for example in the case of La Quina 5 (with a drowning or the wish to dispose of a cumbersome body by throwing it in the river; Martin, 1923) or of some of the Shanidar individuals (because of earthquakes and rockslides; Solecki, 1971; Trinkaus, 2008). However, the archaeoanthatological analysis of the La Quina 5 data shows that it is a deliberate burial (Verna, 2007). In the case of Shanidar, if seismic activity is strong in the area, a rockslide causing the death of several “sleepers” is not, in our minds, the simplest hypothesis. But our analysis as to the causes of preservation of Neandertal skeletons is not dogmatic. So, given the small number of more or less well-preserved skeletons of this taxon (less than 40 in all, withdrawing the Altamura specimen, the Krapina, and La Sima de los Huesos collections; Maureille & Vandermeersch, 2007), we think that a revision of the data explaining

the preservation and/or bone connections of several finds has become necessary. This is the case for example of Regourdou 1 (Madelaine *et al.*, 2008), Saint-Césaire 1 (Vandermeersch, 1993) as well as Châteauneuf 2 (Cauvin & Cauvin, 1969).

#### *The new chronological framework*

The chrono-cultural distribution of funerary deposits also seems important to us within the scope of our thoughts (Table 2). All Neandertal burials are not contemporaneous (Turq *et al.*, 2008). Still recently (e.g. Dean *et al.*, 1998), they were usually related to oxygen isotope stage (OIS) 3 as a) they yield so-called classical Neandertals (which is meaningless in terms of phylogeny), b) they are associated to a Quina type Mousterian, and c) they are associated with a reindeer dominated cold fauna.

A recent revision of the historical, geological and cultural data (Jaubert *et al.*, 2010) allowed us to relate some of these deposits to OIS 5, where they are associated with a Levallois type *débitage*, and others to OIS 3, associated to a Late Mousterian or a transitional techno-complex between the Middle and Upper Palaeolithic. The strong environmental changes during OIS 4, and the consequences these could have had on the Neandertals' demographic history and on the interactions between groups, may explain the absence of primary burials related undoubtedly to this period (Jaubert *et al.*, 2010). The discovery of Neandertal primary burials could thus be related to certain environmental and/or cultural and/or demographic contexts.

The new radiocarbon dates directly made on the Spy I and Spy II fossils and on other archaeological remains from the site are important data (Pirson *et al.*, volume 1: chapter VI; Semal *et al.*, volume 1: chapter XII). Briefly, level C (a red coloured brecciated tufa) or also second FBL is dated between 30,000 and 37,000 BP. It is the sedimentological marker of the site for Lohest and De Puydt, and we know that the human remains were found below this marker (*cf. supra*). The black layer belonging to level D is dated between 42,000 and 44,000 BP. The Spy I and II human remains, found at the bottom of this level, are dated about 36,000 BP.

The adult Neandertal remains of Spy have thus been found in a sedimento-archaeological level yielding remains somewhat older than they are, whereas the dating results show remarkable coherence and homogeneity considering when and how the excavation was carried out (Semal *et al.*, volume 1: chapter XII). Such a result can only be explained if the fossils were deliberately buried in an older level. During the excavation, no pit was noticed on the site, but looking for traces of an anthropic digging of a pit was not in the train of thought of the digger, nor of his employers. It is obvious that the digging conditions on the site made such a discovery unlikely and we can also suppose that the brecciation of the level above the skeletons may have erased such traces, as is the case at Qafzeh cave (Vandermeersch, 1981).

The radiocarbon dates of the two adults (Semal *et al.*, 2009) are more coherent with those obtained for the second FBL where Aurignacian, LRJ and evolved Mousterian have been identified. These new dates for Spy I and Spy II bring both specimens chronologically closer to the most recent Neandertal funerary deposits taken here in consideration, that is Saint-Césaire 1, Le Moustier 1 & 2 and Neandertal 1 (Table 2).

According to these results, the simplest hypothesis is therefore to consider that Spy I and Spy II occupied the site while the second FBL was setting in and that they were buried intrusively in the underlying level (probably by way of the intentional digging of a funerary pit). This hypothesis was already proposed by d'Acy (1888).

#### *Camp sites and deliberate graves*

The archaeological context is also interesting from a global point of view (Table 2). During the Palaeolithic, a camp site is a place where all the members of a group lived for a fairly long time, from the youngest to the oldest individual. It is in these camp sites that we find the strongest anthropic impact on the sediments, the lithic material and the fauna remains. Now, all the deposits interpreted as Neandertal individual primary burials have been found in levels considered as being camp sites. Not one of them

is associated with a hunting camp, butchering site, trap sinkhole or kill site (Binford, 1980, 1982). Thus, the Neandertal fossils of Western Europe with a clear association of cranial and infra-cranial remains belonging to the same individual and concerning OIS 5d to 3 all come from some ten camp sites. Forty per cent of these sites are located in a territory covering only 70 km<sup>2</sup> of South-Western France and 25 % yield at least two deposits.

Now, the distribution of the buried by age class must draw our attention. We are confronted with an important number of neonates, young children, infants (probably deceased around weaning or most likely before) and physically diminished adults who represent 50 % of the individuals (not counting the other age group specimens suffering physical disabilities; Maureille & Vandermeersch, 2007; Maureille & Tillier, 2008). These individuals probably hardly left the camp sites, so it does not seem surprising that they were buried there after their death. Apart from Spy II, we have no knowledge of any young adult or old adolescent buried in a camp site. It is most likely that many died while hunting, travelling, etc.

The age class distribution of the Neandertals buried in camp sites strengthens our interpretation as to the existence of an intentional burial for Spy II. Indeed, the coincidence of the presence of an individual whose age is very little present in the palaeoanthropological collections with an accidental death seems to us very unlikely.

## CONCLUSIONS

In a recent work on the definition and identification of individual or multiple, primary or secondary burials, Duday & Courtaud (2008: 17) wonder about the relevance of substituting the word “deposit” for the word “burial” concerning the Neandertals. This question is based on the rarity of remains and on our degree of resolution as to the living's behaviour towards the dead for those periods. Yet, the complexity of Neandertal societies (Jaubert, 1999; Vandermeersch & Maureille, 2007), of their cultural productions, the way the Neandertals treated some of their phys-

ally diminished contemporaries, protected some of their dead from scavengers - all over their area of distribution - all this shows a concern for the protection, an attachment and probably a questioning about death, and pleads towards the existence of funerary practices.

The existence at the Betche aux Rotches of a primary individual earth burial, contemporary of the end of the Mousterian occupation or of the Middle to Upper Palaeolithic transition, is the most parsimonious hypothesis to explain the conservation of Spy II. It agrees with our knowledge of European Neandertal burials. It is more difficult to give an opinion for Spy I, whose skeleton is now represented by its cranium, mandible and few parts of its infra-cranial skeleton (Rougier *et al.*, this volume: chapter XIX). The particular circumstances of its discovery, however, at a time when the existence of Neandertal burials was not believed in,

were probably not ideal for its anatomical representation, or for certain field observations. Taking these facts in account, the spatial and chronological proximity of Spy I and Spy II and their intrusive position in the black layer supports the existence of the same deliberate anthropic activity that helped towards the preservation of both skeletons.

## ACKNOWLEDGEMENTS

The authors thank H. Rougier and I. Crevecoeur for their assistance with the preparation of this contribution. B. M. thanks all the members of the UMR 5199-PACEA for discussions about Neandertal burials and Mousterian funerary behaviour, F. Lacrampe-Cuyaubère (SARL Archéosphère-Bordeaux) for his help, and the Project "Transitions" (convention 20051403003AB of the Aquitaine region) for funding.

## BIBLIOGRAPHY

- BERGER L., DE RUITER D. J., CHURCHILL S. E., SCHMID P., CARLSON K. J., DIRKS P. H. G. M. & KIBII J. M., 2010. *Australopithecus sediba*: a new species of *Homo*-like Australopith from South Africa. *Science*, **328**: 195-204.
- BERMÚDEZ DE CASTRO J. M. & NICOLÁS M. E., 1997. Palaeodemography of the Atapuerca-SH Middle Pleistocene hominid sample. *Journal of Human Evolution*, **33** (2-3): 333-355.
- BINFORD L. R., 1980. Willow Smoke and Dogs' Tails: Hunter-Gatherer Settlement Systems and Archaeological Site Formation. *American Antiquity*, **45** (1): 4-20.
- BINFORD L. R., 1982. The Archaeology of Place. *Journal of Anthropological Archaeology*, **1** (1): 5-31.
- BISCHOFF J. L., FITZPATRICK J. A., LEÓN L., ARSUAGA J. L., FALGUÈRES C., BAHAIN J. J. & BULLEN T., 1997. Geology and preliminary dating of the hominid-bearing sedimentary fill of the Sima de los Huesos Chamber, Cueva Mayor of the Sierra de Atapuerca, Burgos, Spain. *Journal of Human Evolution*, **33** (2-3): 129-154.
- BOCQUET-APPEL J.-P. & ARSUAGA J. L., 1999. Age Distributions of Hominid Samples at Atapuerca (SH) and Krapina Could Indicate Accumulation by Catastrophe. *Journal of Archaeological Science*, **26** (3): 327-338.
- BOUYSSONIE A., BOUYSSONIE J. & BARDON L., 1908. Découverte d'un squelette humain moustérien à la bouffia de La Chapelle-aux-Saints. *Comptes rendus de l'Académie des Sciences*, **21** (XII): 1-2.
- BOUYSSONIE A., BOUYSSONIE J. & BARDON L., 1913. La Station moustérienne de la "bouffia" Bonneval à La Chapelle-aux-Saints. *L'Anthropologie (Paris)*, **24**: 609-634.
- CAPITAN J. L. & PEYRONY D., 1910. Deux squelettes humains au milieu des foyers de l'époque moustérienne. *Bulletins et Mémoires de la Société d'Anthropologie de Paris*, série IV, **1**: 48-53.
- CARBONELL E., BERMÚDEZ DE CASTRO J. M., ARSUAGA J. L., DíEZ J. C., ROSAS A., CUENCA-BESCÓS G., SALA R., MOSQUERA M. & RODRÍGUEZ X. P., 1995. Lower Pleistocene Hominids and Artifacts from Atapuerca-TD6 (Spain). *Science*, **269**: 826-830.
- CARBONELL E., MOSQUERA M., OLLÉ A., RODRÍGUEZ X. P., SALA R., VERGÈS J. M., ARSUAGA J. L. & BERMÚDEZ DE CASTRO J. M., 2003. Les premiers comportements funéraires auraient-ils pris place à Atapuerca, il y a 350.000 ans? *L'Anthropologie (Paris)*, **107**: 1-14.
- CAUVIN M.-C. & CAUVIN J., 1969. Découverte de restes humains moustériens à l'abri de Hauteroche, Châteauneuf-sur-Charente. *Comptes Rendus de l'Académie des Sciences de Paris*, **268**: 37-40.
- D'ACY E., 1888. Des sépultures dans les dépôts paléolithiques des grottes ou des abris sous roche. *Bulletins et Mémoires de la Société d'Anthropologie de Paris*, série III, **11**: 92-122.
- DEAN D., HUBLIN J.-J., HOLLOWAY R. L. & ZIEGLER R., 1998. On the phylogenetic position of the pre-Neandertal specimen from Reilingen, Germany. *Journal of Human Evolution*, **34** (5): 485-508.
- DEFLEUR A., 1993. *Les sépultures moustériennes*. Paris, CNRS Éditions: 325 p.
- DE NADAILLAC M., 1886. Sur la découverte faite, en Belgique, d'une sépulture de l'âge du Mammouth et du Rhinocéros. *Note de M. Nadaillac, présentée par M. De Quatrefages. Comptes rendus hebdomadaires des séances de l'Académie des Sciences de Paris*, **103**: 490-492.
- DE PUYDT M. & LOHEST M., 1886. Sur les habitants de la grotte de la Bêche-aux-Roches. *Comptes rendus hebdomadaires des séances de l'Académie des Sciences de Paris*, **103**: 893-894.
- DE PUYDT M. & LOHEST M., 1887. L'homme contemporain du Mammouth à Spy (Namur). *Annales de la Fédération Archéologique et Historique de Belgique, Compte rendu des travaux du Congrès tenu à Namur les 17-19 août 1886*, **2**: 207-240, 10 pl. h.t.
- DUDAY H., 2009. *The archaeology of the dead. Lectures in archaeoethanatology*. Oxford, Oxbow Books: 158 p.
- DUDAY H. & COURTAUD P., 2008. Qu'est-ce qu'une sépulture? Comment la reconnaître. In: B. VANDERMEERSCH, J.-J. CLEYET-MERLE, J. JAUBERT, B. MAUREILLE & A. TURQ (ed.), *Pre-mière humanité, gestes funéraires des Néandertaliens*. Paris, Réunion des Musées Nationaux: 16-24.
- FERNÁNDEZ-JALVO Y., DíEZ J. C., CÁCERES I. & ROSELL J., 1999. Human cannibalism in the

- Early Pleistocene of Europe (Gran Dolina, Sierra de Atapuerca, Burgos, Spain). *Journal of Human Evolution*, **37** (3-4): 591-622.
- FRAIPONT J. & LOHEST M., 1886. La race humaine de Néanderthal ou de Canstadt, en Belgique. Recherches ethnologiques sur des ossements humains, découverts dans des dépôts quaternaires d'une grotte à Spy et détermination de leur âge géologique. Note préliminaire. *Bulletin de l'Académie royale des Sciences de Belgique*, 3<sup>ème</sup> série, **XII**: 741-784.
- FRAIPONT J. & LOHEST M., 1887. La race humaine de Néanderthal ou de Canstadt en Belgique. Recherches ethnologiques sur des ossements humains, découverts dans des dépôts quaternaires d'une grotte à Spy et détermination de leur âge géologique. *Archives de Biologie*, **7**/1886: 587-757.
- GABUNIA L., ANTÓN S. C., LORDKIPANIDZE D., VEKUA A., JUSTUS A. & SWISHER III C. C., 2001. Dmanisi and dispersal. *Evolutionary Anthropology*, **10**: 158-170.
- HAECKEL E., 1909. *État actuel de nos connaissances sur l'origine de l'Homme*. Paris, Librairie C. Reinwald: 60 p.
- JAUBERT J., 1999. *Chasseurs et artisans du Moustérien*. Paris, La Maison des Roches: 157 p.
- JAUBERT J., MAUREILLE B. & TURQ A., 2010. A stratigraphic and chronological revision of Neanderthal burials in Western Europe: chronicle of a long-awaited aging. *PaleoAnthropology*, **2010**: A16.
- KING W., 1864. The reputed fossil man of the Neanderthal. *Quarterly Journal of Science*, **1**: 88-97.
- LOHEST M., JULIN Ch. & RUTOT A., 1925. *Julien Fraipont*. Bruxelles, Académie royale des Sciences de Belgique: 69 p.
- MADÉLAINE S., MAUREILLE B., CAVANHIÉ N., COUTURE-VESCHAMBRE Ch., BONIFAY E., ARMAND D., BONIFAY M.-F., DUDAY H., FOSSE P. & VANDERMEERSCH B., 2008. Nouveaux restes humains moustériens rapportés au squelette néandertalien de Regourdou I (Regourdou, commune de Montignac, Dordogne, France). *Paléo*, **20**: 101-114.
- MARTIN H., 1923. *Recherches sur l'évolution du Moustérien dans le gisement de La Quina (Charente). II: L'Homme fossile*. Paris, Octave Doin: 147 p.
- MAUREILLE B. & TILLIER A.-M., 2008. Répartition géographique et chronologique des sépultures néandertaliennes. In: B. VANDERMEERSCH, J.-J. CLEYET-MERLE, J. JAUBERT, B. MAUREILLE & A. TURQ (ed.), *Première humanité, gestes funéraires des Néandertaliens*. Paris, Réunion des Musées Nationaux: 66-74.
- MAUREILLE B. & VANDERMEERSCH B., 2007. Les sépultures néandertaliennes. In: B. VANDERMEERSCH & B. MAUREILLE (ed.), *Les Néandertaliens, biologie et cultures*. Documents préhistoriques, **23**. Paris, CTHS: 311-322.
- MAUREILLE B. & VAN PEER P., 1998. Une donnée peu connue sur la sépulture du premier adulte de La Ferrassie (Savignac-de-Miremont, Dordogne). *Paléo*, **10**: 291-302.
- PESCE DELFINO V. & VACCA E., 1994. Report of an archaic human skeleton discovered at Altamura (Bari) in the "Lamalung" district. *Human Evolution*, **9** (1): 1-9.
- PEYRONY D., 1921. *Les Moustériens inhumèrent-ils leurs morts?* Périgieux, Ribes et Cie: 8 p.
- PEYRONY D., 1934. *La Ferrassie, Moustérien, Périgordien, Aurignacien*. Paris, Librairie E. Leroux: 92 p.
- PRUNER-BEY F. I., 1866. Sur la mâchoire humaine de La Naulette (Belgique). *Bulletins et Mémoires de la Société d'Anthropologie de Paris*, **1** (1): 584-603.
- SCHAAFFHAUSEN D., 1858. Zur Kenntnis der ältesten Rassenschädel. *Archiv für Anatomie, Physiologie und Wissenschaftliche Medizin*, **48**: 453-478.
- SEMAL P., ROUGIER H., CREVECOEUR I., JUNGELS C., FLAS D., HAUZEUR A., MAUREILLE B., GERMONPRÉ M., BOCHERENS H., PIRSON S., CAMMAERT L., DE CLERCK N., HAMBÜCKEN A., HIGHAM T., TOUSSAINT M. & VAN DER PLICHT J., 2009. New Data on the Late Neandertals: Direct Dating of the Belgian Spy Fossils. *American Journal of Physical Anthropology*, **138** (4): 421-428.
- SEMPÉ M., PÉDRON G. & ROY-PERNOT M.-P., 1979. *Auxologie, méthode et séquences*. Paris, Laboratoire théraplix: 205 p.
- SOLECKI R. S., 1971. *Shanidar, the first flower people*. New York, Knopf: 290 p.

- TRINKAUS E., 2008. Les sépultures néandertaliennes de Shanidar. In: B. VANDERMEERSCH, J.-J. CLEYET-MERLE, J. JAUBERT, B. MAUREILLE & A. TURQ (ed.), *Première humanité, gestes funéraires des Néandertaliens*. Paris, Réunion des Musées Nationaux: 66-74.
- TRINKAUS E. & SHIPMAN P., 1996. *Les Hommes de Néandertal*. Paris, Seuil: 425 p.
- TURQ A., JAUBERT J., MAUREILLE B. & LAVILLE D., 2008. Le cas des sépultures néandertaliennes du Sud-Ouest: et si on les vieillissait? In: B. VANDERMEERSCH, J.-J. CLEYET-MERLE, J. JAUBERT, B. MAUREILLE & A. TURQ (ed.), *Première humanité, gestes funéraires des Néandertaliens*. Paris, Réunion des Musées Nationaux: 90.
- VANDERMEERSCH B., 1981. *Les Hommes fossiles de Qafzeh (Israël)*. Cahiers de Paléoanthropologie. Paris, CNRS Éditions: 319 p.
- VANDERMEERSCH B., 1993. Was the Saint-Césaire discovery a burial? In: F. LÉVÊQUE, A. M. BACKER & M. GUILBAUD (ed.), *Context of a Late Neandertal*. Monographs in world archaeology, **16**. Madison, Prehistory Press: 129-131.
- VANDERMEERSCH B., 1995. Le problème des premières sépultures. In: J.-P. CROS & J.-M. LARGE (ed.), *“La mort”, passé, présent, conditionnel*. La Roche-sur-Yon, GVEP: 17-23.
- VANDERMEERSCH B. & MAUREILLE B., 2007. *Les Néandertaliens, biologie et cultures*. Documents préhistoriques, **23**. Paris, CTHS: 342 p.
- VERNA C., 2007. L'existence d'une sépulture à La Quina (Charente)? Retour aux données. In: J. EVIN (ed.), *Un siècle de construction du discours scientifique en Préhistoire*. XXVI<sup>e</sup> congrès préhistorique de France, Avignon 21-25 Septembre 2004, Société préhistorique française, **2**: 527-535.
- VIRCHOW R. C., 1882. Der Kiefer aus der Schipka-Höhle und der Kiefer von La Naulette. *Zeitschrift für Ethnologie*, **14**: 277-310.

## AUTHORS AFFILIATION

Bruno MAUREILLE  
CNRS  
PACEA, UMR 5199  
Allée Geoffroy St Hilaire  
CS 50023  
33615 Pessac cedex  
France  
[b.maureille@pacea.u-bordeaux1.fr](mailto:b.maureille@pacea.u-bordeaux1.fr)

Michel TOUSSAINT  
Direction de l'Archéologie, DGO4  
Service public de Wallonie  
1, rue des Brigades d'Irlande  
5100 Namur  
Belgique  
[mtoussaint1866@hotmail.com](mailto:mtoussaint1866@hotmail.com)  
[michel.toussaint@spw.wallonie.be](mailto:michel.toussaint@spw.wallonie.be)

Patrick SEMAL  
Scientific Heritage & Earth and History of Life  
Royal Belgian Institute of Natural Sciences  
29, Vautier Street  
1000 Brussels  
Belgium  
[patrick.sem@natualsciences.be](mailto:patrick.sem@natualsciences.be)