



HAL
open science

A New Look at the End of the Middle Palaeolithic Sequence in Southwestern France

Jacques Jaubert, Jean-Guillaume Bordes, Emmanuel Discamps, Brad Gravina

► **To cite this version:**

Jacques Jaubert, Jean-Guillaume Bordes, Emmanuel Discamps, Brad Gravina. A New Look at the End of the Middle Palaeolithic Sequence in Southwestern France. A. P. Derevianko & M. V. Shunkov. Characteristic features of the Middle to Upper Paleolithic transition in Eurasia, Asian Palaeolithic Association, pp.102-115, 2011. halshs-00656667

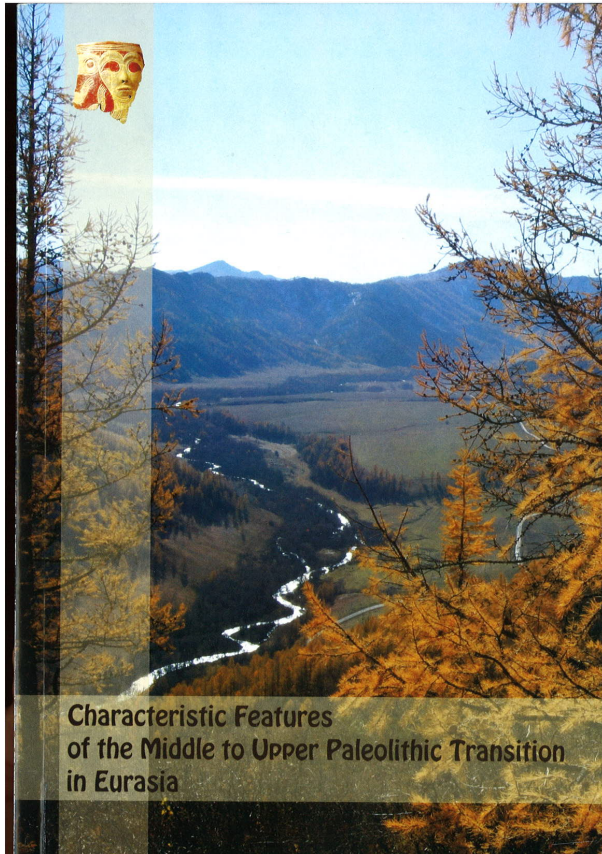
HAL Id: halshs-00656667

<https://shs.hal.science/halshs-00656667>

Submitted on 28 Feb 2012

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

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



Jaubert, J., Bordes, J.-G., Discamps, E., Gravina, B., 2011. A New Look at the End of the Middle Palaeolithic Sequence in Southwestern France. In : A. P. Derevianko & M. V. Shunkov (eds.) « Characteristic Features of the Middle to Upper Paleolithic Transition in Eurasia », Asian Palaeolithic Association, Novosibirsk, pp. 102-115.

Article published in the proceedings of the « International Symposium Characteristic features of the Middle to Upper Paleolithic transition in Eurasia: development of culture and evolution of Homo species » (Denisova, 4-10 juillet 2011).

This PDF is a re-edited version of the original article, therefore page numbers may not correspond with the original paper version.

A NEW LOOK AT THE END OF THE MIDDLE PALAEOOLITHIC SEQUENCE IN SOUTHWESTERN FRANCE

Jacques Jaubert¹, Jean-Guillaume Bordes¹, Emmanuel Discamps¹ and Brad Gravina²

¹ University of Bordeaux 1, PACEA UMR 5199 (CNRS-UB1-MCC), France

² Bordeaux, France

Email : j.jaubert@pacea.u-bordeaux1.fr

Abstract

In the south west of France the majority of research concerning the Middle-to-Upper Palaeolithic transition tends to focus upon the Chatelperronian and Aurignacian at the expense of the end of the Middle Palaeolithic. This contribution attempts to rectify this shortcoming by demonstrating that the classic model of a direct MTA-Chatelperronian filiation is no longer valid as these two techno-complexes are in fact separated by two final Mousterian phases: a Discoid-Denticulate Mousterian followed by a Levallois Mousterian with large scrapers.

Key Words

Final Mousterian - Discoid - denticulates - Levallois - Mousterian of Acheulean Tradition (MTA) - southwestern France

In particular regions of Eurasia, where Mousterian assemblages have produced dates contemporaneous with the arrival of the first anatomically modern humans, different hypotheses have been advanced to account for the persistence of certain final Neanderthals populations, including their possible isolation (Carbonell and Vaquero, 1996; Camps and Szmids, 2008) in such areas as the south of the Iberian peninsula and Gibraltar (Finlayson *et al.*, 2010), the Crimea (Pettitt, 1998; Chabai, 2003; Monigal, 2006), or even the Caucasus (Golovanova and Doronichev, 2003). For the rest of western and central Europe, the question of the end of the Middle Palaeolithic is sometimes overlooked given the presence of certain techno-complexes commonly referred to as 'transitional'. These industries immediately succeed the local Mousterian and are therefore often attributed to the final Neanderthals: for example, the Chatelperronian (Pelegrin, 1995), Ulluzian (Peresani, 2008) or Lincombian-Ranisian-Jerzmanovician (LRJ) (Flas, 2006). It is due to the persistent interest of researchers in this single 'transition' and its associated industries that the very end of the Middle Palaeolithic remains insufficiently studied. In this contribution we would like to return to the final Neanderthal occupation *sensu stricto* of Western Europe, more particularly, as it pertains to the south west of France.

The main elements and historical background of the 'classic' hypothesis concerning the end of the Middle Palaeolithic and the emergence of the Upper Palaeolithic in the south west of France can generally be resumed by the following:

- According to early researchers, the Mousterian of Acheulean Tradition (MTA) industries, such as those originally defined by D. Peyrony (1930) and then F. Bordes (1953), occupy the summit of stratified sequences.
- The MTA was subsequently subdivided by F. Bordes into two variants (Bordes, 1981); the Mousterian of Acheulean Tradition A (with numerous bifaces together with scrapers and backed knives) followed by an MTA-B (reduction in the quality and number of bifaces in favour of backed knives and Upper Palaeolithic tools types). Transitional (A-B) levels can exist such as those described at Pech de l'Azé I (Bordes, 1954-55).
- The MTA-B, given its place at the top of several Mousterian sequences and below the Chatelperronian (the «Lower Perigordian» following Peyrony's original terminology (1933) or the «Castelperronian» for others (Lévêque *et al.*, 1993; Rigaud, 2000)), is still considered to be a natural candidate for the emergence of this transitional industry (Pelegrin, 1990) which is itself ultimately succeeded by the Aurignacian.
- Several authors (Peyrony, 1948; Bordes, 1968; Pelegrin, 1995) have considered the MTA-B variant, for reasons both stratigraphic and typo-technological, as the origin of the 'Perigordian', a no-longer recognized techno-complex, but one whose former 'Perigordian I' has become what we know today as the Chatelperronian or Castelperronien (Lévêque and Vandermeersch 1980, Rigaud 1996).
- While still linked to the Mousterian of Acheulean Tradition, the Chatelperronian is, on the other hand, markedly different from the initial phases of the Aurignacian. Known as the Aurignacian I or Early Aurignacian with split-based bone points, this techno-complex, described as being monolithic over a substantial geographic extension, is considered to be intrusive in western Europe (Peyrony, 1933; Bordes, 1972). According to this view, known as the 'replacement model', the Aurignacian in general is often conflated with the Aurignacian I in particular and has come to be seen as the material proxy for the anatomically modern human colonisation of Europe, most famously represented by the remains of Cro-Magnon man (Stringer and Andrews, 1988; Mellars and Stringer, 1989)
- Despite still being sparse during the second half of the 20th century, the human remains that were associated with the MTA as well as the Chatelperronian or 'Lower Perigordian'

were generally attributed to (Combe-Capelle) or assumed to be (Pech de l'Azé I) modern human and not Neanderthal. The coexistence of these two human lineages, as well as the variability of regional sequences across Europe, has led researchers to propose a poly-centric model for the emergence of the Upper Palaeolithic. In terms of lithic industries, this model relies heavily on the presence of Upper Palaeolithic tool types in late Middle Palaeolithic assemblages such as endscrapers and burins, but above all, backed knives in the MTA-B (Bordes, 1972). The hypothesis of a gradual *in situ* evolution of the Upper Palaeolithic was relegated to a minority position in the eighties (Cabrera-Valdes *et al.*, 2001; Maillo *et al.*, 2004; Bernaldo de Quiros *et al.*, 2010).

- The 1979 discovery of a Neanderthal skeleton from a Chatelperronian context at Saint-Césaire (Lévêque and Vandermeersch, 1980) lent further credibility to the stratigraphic position of the Chatelperronian human remains from Arcy-sur-Cure already attributed to the «Paleanthropians» (Neanderthals) by Leroi-Gourhan (1958). Despite the fact that F. Bordes (1981) considered the Saint-Césaire discovery to be somewhat «awkward», a new paradigm was born whereby the Chatelperronian assemblages became the handiwork of the Neanderthals and were thus seen as representing a genuine 'transition' whose configuration could result from either acculturation (Demars and Hublin, 1989) or, given that the Chatelperronian was now seen as a Neanderthal epiphenomenon, a local evolution from a Mousterian substrate. Furthermore, the emergence of symbolic expression was no longer inherently connected to the appearance of modern humans (d'Errico *et al.*, 1998).
- The few human remains recovered from MTA contexts have now been attributed to the Neanderthals such as at Pech de l'Azé I (Maureille and Soressi, 2000) or Jonzac (Jaubert *et al.*, 2008; Richards *et al.*, 2008).
- The reanalysis of the several MTA assemblages dated to within MIS 3 has clarified lithic production sequences (Soressi, 2004; Soressi *et al.*, 2007, 2008; Guibert *et al.*, 2008) and has reaffirmed the existence of a laminar component within the MTA geared towards the production of backed knives and Upper Palaeolithic tool types. This has led some to suggest that this industry could be the origin of the Chatelperronian (Pelegriin and Soressi, 2007).
- This body of work as a whole has functioned to reinforce the replacement model which sees a population of anatomically modern humans, bearing the Aurignacian, who colonised Neanderthal Europe, be it still 'Mousterian' or 'transitional' (Mellars, 2004, 2006).

The debate concerning the 'transition', which has progressively emerged from the above outline, illustrates the fact that the other final Middle Palaeolithic cultural manifestations besides the MTA are rarely considered. However, we have recently shown that the MTA is not the final expression of the Mousterian in south-western France (Jaubert, 2010a, 2010b). Despite recent positions to the contrary (Pelegriin and Soressi, 2007), this demonstration significantly weakens, if not annuls, the theory of a direct and gradual succession of the type MTA A → MTA-B → Archaic 'Castelperronian' (Lévêque *et al.*, 1993) → Chatelperronian.

At least one lithic techno-complex (LTC), if not two, follow the MTA in several well dated sequences: a Denticulate Mousterian with Discoidal debitage (Thiébaud, 2005; Thiébaud, 2007) and potentially a Levallois LTC with large scrapers (Asselin, 2006; Jaubert, *op. cit.*). This is also true in regions on the margin of, or outside the MTA phenomenon, such as in Bourgogne with the Arcy-sur-Cure sequences (Girard, 1978, 1980, 1982; Lhomme *et al.*, 2005) or, as is the case on the other side of the Rhone valley, with the Neronian as originally proposed by Combier (1990) and more precisely characterised by L. Slimak (2004, 2008).

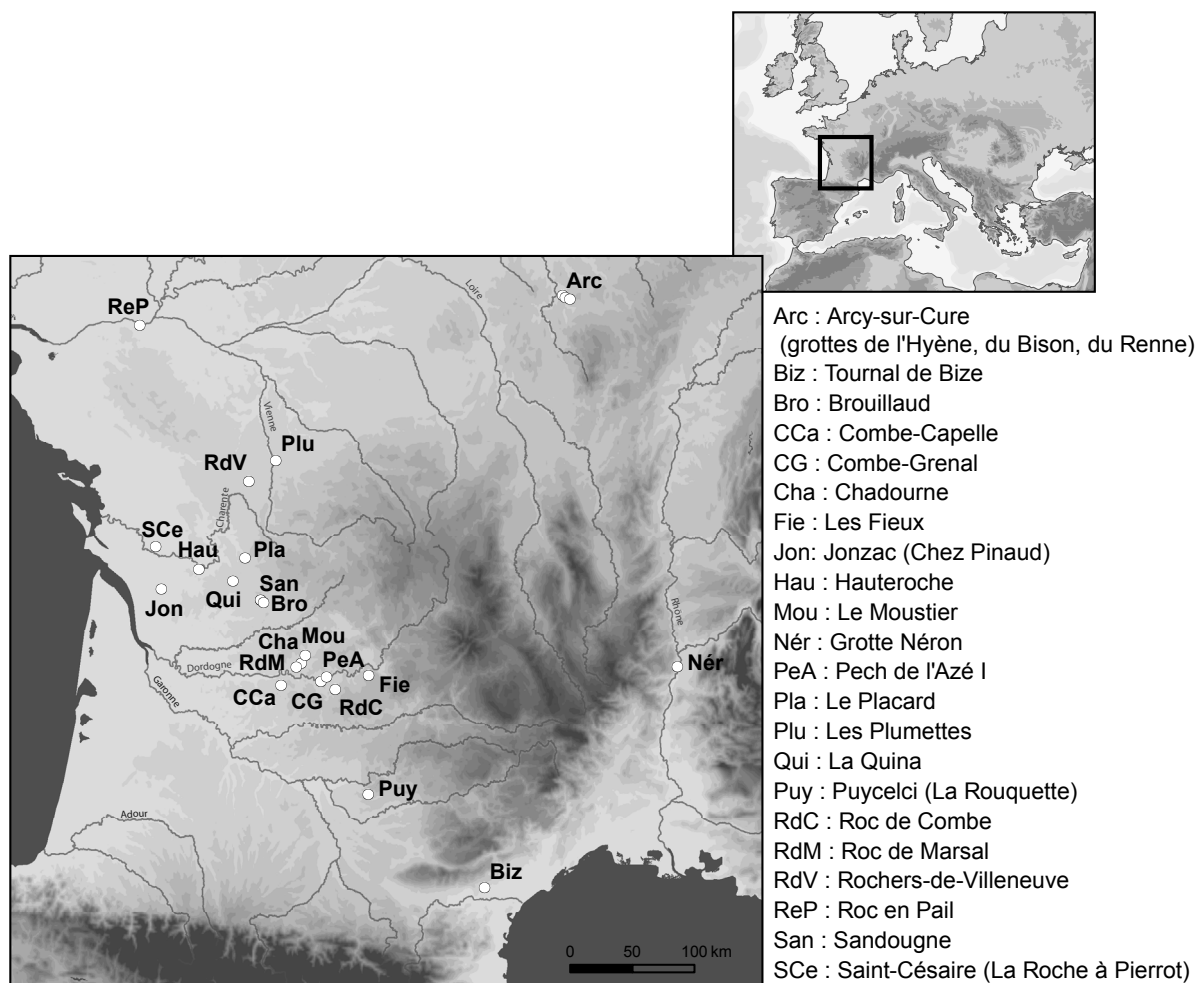


Fig. 1: Geographical framework of the Final Middle Paleolithic. Location of the main sequences discussed in the text.

Furthermore, a recent reconsideration of the relevant faunal data has also permitted the construction of a new bio-stratigraphic framework for the end of the Middle Palaeolithic and the beginning of the Upper Palaeolithic (Discamps *et al.*, in press). Taking into account the stratigraphic data and available absolute dates, it has been possible to correlate significant changes in the character of faunal assemblages with the regional bioclimatic record (Sánchez Goñi *et al.*, 2008). At least three different techno-complexes from the end of the Mousterian can be placed between the Quina Mousterian (correlated with Heinrich event 6, ~60 ka BP) and the debut of the Upper Palaeolithic (correlated with Heinrich event 4, ~40 ka BP) (Fig. 2).

We would like to discuss the two LTC that mark the end of the Middle Palaeolithic of south-western France as well as the relevant archaeological sequences (Fig. 1).

The Discoid-Denticulate Mousterian

This industry is defined in techno-typologically terms by a Discoid debitage (*sensu* Boëda, 1993; Peresani ed., 2003) principally associated with a notch and denticulate tool-group; Clactonian notches, diverse types of denticulates, Tayac points, etc. (Thiébaud, 2005, 2007). The scraper component is generally very poorly, if not sporadically, represented. Even if the majority of assemblages employed by F. Bordes to formulate 'his' definition of Denticulate Mousterian (Bordes, 1963) can be confused, this new definition is more precise than the original defini-

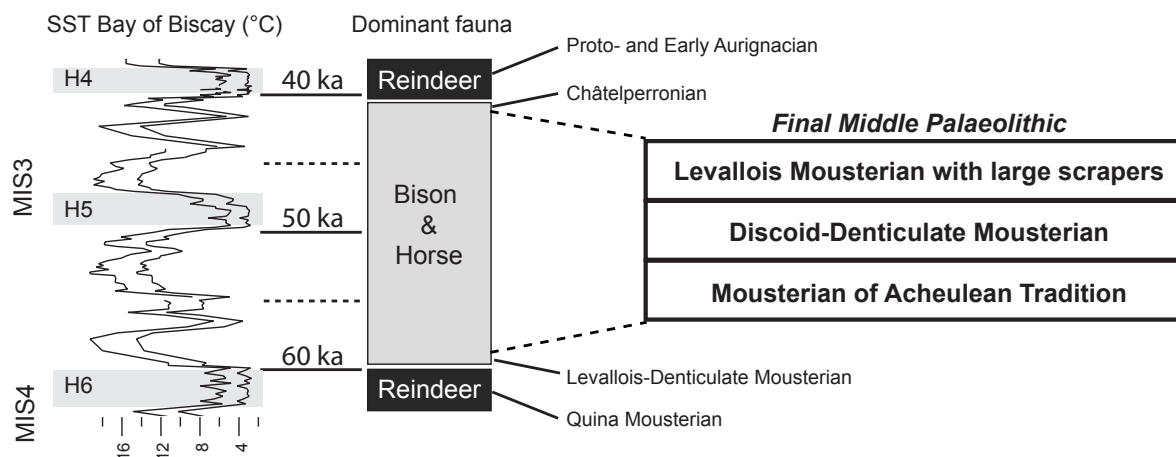


Fig. 2: Chronological framework of the Final Middle Paleolithic. Synthesis of proposed correlations between paleoclimatic records (Bay of Biscay sea surface temperatures, after Sánchez-Goñi et al., 2008), hunted fauna, and lithic techno-complexes (after Discamps et al., in press). The three principle techno-complexes from the end of the Middle Paleolithic are highlighted.

tion, which should no longer be employed. In fact, several forms of a ‘Denticulate Mousterian’ exist that, apart from their typologically ‘denticulate’ component, differ radically; for example, Combe-Grenal level 20, though attributed to a Quina Mousterian laden with denticulates, it is still not a Denticulate Mousterian *sensu stricto* (Faivre, 2008), this is similar to other industries attributable to a Levallois Mousterian with denticulates such as at Roc-de-Marsal (level III, Thiébaud, 2003), La Quina (level 7, Park, 2007) or Jonzac (level 9, Thiébaud in Jaubert, 2008).

In addition to the different sequences at Arcy-sur-Cure, this LTC is known from numerous sites in south-western France (Thiébaud, 2005) and always in a stratigraphically coherent position: Combe-Grenal (levels 11 to 16) Brouillaud (level D) Hauteroche (level 1, 3), Sandougne (levels A-B), Chadourne (c. A, A-B), La Quina Amont (levels 4a, 4b, 5, 6a, 6b, 6c), Les Rochers de Villeneuve (level N), Saint-Césaire (Egpf-Egp-Egf or c. 10-11-12 after Thiébaud et al. 2009), le Placard (level 6), Les Fieux (levels J-K), Roc-de-Combe (level B), Puycelsi (level A), Roc-en-Pail (level 5) among others.

From an archeo-stratigraphic point of view the following can be established:

- When this LTC is present in the same sequence as the Chatelperronian, it never follows or is interstratified with the latter and therefore systematically underlies it as can be seen at Roc-de-Combe and Saint-Césaire. This is also the case outside of the South West such as with the Grotte du Renne and Grotte du Bison at Arcy.
- At least three sites present sequences where the Discoid-Denticulate Mousterian overlies the MTA; Saint-Césaire, La Quina, and Brouillaud.
- When this LTC is found in the same sequence as the Quina Mousterian, it systematically overlies it as at Placard, Hauteroche, Combe-Grenal, La Quina, Chadourne, Puycelsi, and Roc-en-Pail (Mellars, 1969, 1996).
- Several cases of recurrences or unexpected interstratifications (Les Fieux, Combe-Grenal (top of the sequence), Le Moustier) require verification or further discussion as to whether or not the initial attribution of this LTC was indeed correct as well as the LTC that complete the sequence.

The Discoid-Denticulate Mousterian has produced direct dates from the following sequences:

- La Quina (43 ± 3.6 ka BP);
- Saint-Césaire, level 10: 40.9 ± 2.9 ka BP (mean of 9 TL dates); level 11: 38.2 ± 3.3 ka BP (mean of 2 TL dates) and level 12: 42.4 ± 4.3 ka BP (TL) (Lévêque *et al.*, 1993);
- Roc-de-Combe, $44,700 \pm 2,900$ and $50,000 \pm 2,400$ in radiocarbon years (Bordes, 2002).

It has also been indirectly dated at Rochers de Villeneuve by a terminus ante quem provided by the overlying level dated to between 40.7 ± 9 and 45.2 ± 1.1 ka BP (*infra*). If we exclude the significantly older date from Roc-de-Combe, the time period concerned is therefore between 38.2 and 44.7 ka BP. To our knowledge, no human remains are clearly associated with this assemblage type.

While the fauna associated with this LTC is dominated by horse and bison (Fig. 2, Discamps *et al.*, in press), complex subsistence practices (specialized, communal, and seasonal hunting strategies associated with surplus food storage, anticipation of prey movements and needs scheduling) concerning Bison have been identified at Mauran, La Quina, and Puycelsi (Rendu *et al.*, in press).

Based primarily on the construction of archeo-stratigraphies from the South-West of France and surrounding regions (the Bourgogne and Centre-Ouest) our hypothesis maintains that this LTC follows the MTA, which was up until now considered to be the last Mousterian facies in France. This is no longer the case. Given that the 'hyper-mousterian' techno-typological profile of this LTC diverges considerably from that of the MTA (no laminar products nor Upper Palaeolithic tool types) it cannot therefore be considered as a legitimate candidate for the origin of the Chatelperronian. Furthermore, when the Chatelperronian is present in the same sequence it directly follows this lithic techno-complex, which once again accentuates the rupture between the Middle and Upper Palaeolithic and leaves no space for any concept of a 'transition'.

The Levallois Mousterian with large scrapers

In the same manner, although very different from the previous example, another LTC is also stratigraphically posterior to the MTA: a Levallois Mousterian with large scrapers. Typologically, it could be confused with certain Ferrassie Mousterian assemblages due to the presence of Levallois debitage (recurrent centripetal) and a tool component dominated by scrapers, particularly, double scrapers and well-crafted, sometimes sizeable, double-convergent scrapers. Our present knowledge can be summarized by the following:

- This LTC is known from the sequence of Rochers de Villeneuve (c. Jr) in the Vienne where it overlies a Discoid-Denticulate Mousterian (Asselin, 2006) and is dated to between 40.7 ± 9 and 45.2 ± 1.1 BP. MtDNA analysis of a human femur fragment recovered from this level has confirmed its attribution as being Neanderthal (Beauval *et al.*, 2005, 2006).
- Levels E, F1, and F2 from the Grotte du Bison at Arcy (Yonne) present a comparable succession whereby a Levallois Mousterian overlies a Discoid-Denticulate LTC (Lhomme *et al.*, 2005).
- Level J (J1-J2-J3-J4-5) of Le Moustier (Lower Shelter) is also relevant given the fact that it is stratigraphically posterior to both an MTA level (H) and a poorly defined Denticulate level (I) dated to 40.9 ± 5 ka. Level J, which contained the Neanderthal burials (Maureille, 2002) was dated by to 40.3 ± 2.6 ka BP and undoubtedly merits further attention. Unfortunately, the material recovered by Peyrony demonstrates an over-representation of larger pieces and retouched tools suggestive of a recovery bias. However, very preliminary observations

of the material indicate the co-occurrence of both discoid and Levallois debitage. This layer is overlain by a still poorly published Chatelperronian level dated to 42.6 ± 3.7 ka BP (Valadas *et al.*, *op. cit.*).

- It is very probable that level Ejob sup of Saint-Césaire (Charente-Maritime), attributed to the Chatelperronian during excavations (Lévêque *et al.*, 1993), contains to some extent a Levallois component that can be linked to this techno-complex with large scrapers (Bordes *et al.*, 2010).
- While the fauna is once again dominated by Bison and Horse (Fig. 2), assemblages securely attributable to human agents appear much more rare than was the case with the Discoid-Denticulate Mousterian. This techno-complex is for the moment essentially represented by paleontological sites demonstrating only an ephemeral human presence with lithic remains often associated with hyena dens, a carnivore particularly abundant during this period (Discamps, 2010). This is the case at Rochers de Villeneuve and perhaps at Les Plumettes in the Vienne (Airvaux, 1987; Primault, 2003).

Discussion

Before the Early Aurignacian, Proto-Aurignacian, and the Chatelperronian (Bordes *et al.*, this volume) the South-West of France witnessed an ultimate phase of Neanderthal occupation that cannot be confused with either the debut of the Upper Paleolithic, the arrival of the first modern humans, or even the 'transitional' industries. This occupation is clearly more recent than the Mousterian of Acheulean Tradition industries of MIS 3. At least one, if not two, lithic techno-complexes (LTC) have recently been dated and documented:

- a Discoid-Denticulate Mousterian (Thiébaud, 2005, 2007) followed chronologically by
- a Levallois Mousterian with large scrapers which still requires further documentation.

These LTC, estimated to date between 45 and 39 ka BP, have been studied from a techno-typological standpoint based on the identification of one or several main products and groups of associated tools, only once their stratigraphic integrity had been verified by a taphonomic analysis (geoarchaeological, systematic inter-level refitting, etc.)

The veritable Mousterian character of these lithic techno-complexes does not detract from their modernity and in no way supports the idea that the disappearance of the Neanderthals was due to their following a 'dead end' cultural trajectory. It only serves to highlight that for long periods of time during the Pleistocene, human groups were not only substantially tied to their surrounding ecosystems, but were considerably limited by paleo-historic mechanisms.

Interdisciplinary approaches (litho-stratigraphy – geoarchaeology - dating programs – paleoanthropology – paleogenetics - palaeontology – biochronology – archaeozoology - lithic techno-typology - use-wear analysis - pigments) must be employed in the coming years to refine this framework. In addition to confirming, and where necessary, clarifying this new archeo-sequence, one of our principle objectives was to contribute new and updated information to the debate surrounding why the Neanderthals disappeared in western Europe.

References

- Airvaux, J., 1987. Le site des «Plumettes» à Lussac-les-châteaux (Vienne), Préhistoire de Poitou-Charentes. Problèmes actuels. Actes du 111e Congrès national des sociétés savantes. Poitiers, 1986. Editions du CTHS.
- Asselin G., 2005. Étude techno-typologique et spatiale du matériel lithique du niveau J du site Moustérien des Rochers de Villeneuve, Lussac-les-Châteaux, Vienne (86), Mémoire de Master 2, Université Bordeaux 1.
- Beauval C., Larampe-Cuyaubère F., Maureille B., Trinkaus E., 2006. Direct Radiocarbonate Dating and Stable Isotopes of the neandertal Femur from Les Rochers de Villeneuve (Lussac-les-Châteaux, Vienne). Bull. et Mémoires de la Soc. d'Anthropologie de Paris, 18: 35-42.
- Beauval B., Maureille B., Lacrampe-Cuyaubère F., Serre D., Peressinotto D., Bordes J.-G., Cochard D., Couchoud I., Dubrasquet D., Laroulandie V., Lenoble A., Mallye J.-B., Pasty S., Primault J., Rohland, N., Paääbo, Sv. Trinkaus E., 2005. A late Neandertal femur from Les Rochers-de-Villeneuve, France. PNAS, 102 (20): 7085-7090.
- Bernaldo de Quiros F. & Maillou-Fernández J.M., 2010. The Transitional Aurignacian and the Middle-Upper Paleolithic Transition Model in Cantabrian Iberia, In: M. Camps, P. Chauchan, Sourcebook of Paleolithic Transitions, Springer Science + Business Media, p. 341-359.
- Boëda É., 1993. Le débitage discoïde et le débitage récurrent centripète. Bull. de la Soc. Préhist. Franç., 86 (6): 392-404.
- Bordes F., 1953. Essai de classification des industries «moustériennes». Bulletin de la Société Préhistorique Française, 50 (7-8): 457-466.
- Bordes F. 1954. Les gisements du Pech de l'Azé (Dordogne). I. Le Moustérien de Tradition Acheuléenne, L'Anthropologie, 58 (5-6): 401-432.
- Bordes F. 1955. Idem (Suite), L'Anthropologie, 59 (1-2): 1-38.
- Bordes F., 1963. Le Moustérien à denticulés. Brodarjev Zbornik, Acta Archaeol. Acad. Sc. Art Sloven., Arkeolovski Vestnik, t. XIII-XIV, Ljubjana 1962-1963, p. 43-50.
- Bordes F. 1968. La question périgordienne. In : La Préhistoire : problèmes et tendances, Paris, Éd. du CNRS, p. 59-71.
- Bordes F. 1972. Du Paléolithique moyen au Paléolithique supérieur, continuité ou discontinuité ? In: Origine de l'Homme moderne : actes du Colloque de l'UNESCO, Paris, p. 211-218.
- Bordes F., 1981. Vingt-cinq ans après : le complexe moustérien revisité. Bulletin de la Société préhistorique française, 78 (3):103-108.
- Bordes J.-G., 2002. Les interstratifications Châtelperronien / Aurignacien du Roc-de-Combe et du Piage (Lot, France) : analyse taphonomique des industries lithiques, implications archéologiques. Thèse de doctorat, Université Bordeaux 1, 365 p.
- Bordes J.-G., Bachellerie F, Caux S., Eizenberg L., Gravina B., Michel A., Morin E. et Teyssandier N., 2010. La Roche à Pierrot, St Césaire, (fouilles François Lévêque) : la séquence paléolithique supérieur. Projet d'Aide à la Préparation d'une Publication. Rapport d'activité 2010 / demande 2011, SRA Poitou-Charentes, 80 p. (unpublished).

- Cabrera-Valdés V., Maillo Fernández J. M., Bernaldo de Quirós F., 2000. Esquemas operativos laminares en el Musteriense final de la Cueva del Castillo (Puento Viesgo, Cantabria). *Espacio, Tiempo y Forma, Serie I, Prehistoria y Arqueología*, Madrid, UNED, 13: 51-78.
- Cabrera-Valdes V., Maillo J.M., Lloret M., et Bernaldo De Quiros F., 2001. La transition vers le Paléolithique supérieur dans la grotte du Castillo (Cantabrie, Espagne) : la couche 18. *L'Anthropologie*, 105: 505-532.
- Camps M. and Szmidt C. (eds.), 2008. *The Mediterranean from 50 000 to 25 000 BP. Turning points and new directions*. Oxford, Oxbow Books, 354 p.
- Carbonell E., Vaquero M. eds., 1996. *The Last Neanderthals. The First Anatomically Modern Humans. Cultural Change and Human Evolution: the Crisis at 40 KA BP*, Universitat Rovira i Virgili, Tarragona, 446 p.
- Chabai V. P., 2003. The chronological and industrial variability of the Middle to Upper Paleolithic transition in eastern Europe, In J. Zilhão & F. D'Errico (eds.), *The chronology of the Aurignacian and of the transitional technocomplexes: dating, stratigraphies, cultural implications*. Proceedings of Symposium 6.1 of the XIVth congress UISPP, University of Liège, 2-8 Sept. 2001, Lisboa: Instituto Português de Arqueologia, 2003 (*Trabalhos de Arqueologia*, 33): 71-86.
- Combiér J., 1990. De la fin du Moustérien au Paléolithique supérieur. Les données de la région rhodanienne. In C. Farizy (Éd.), *Paléolithique moyen récent et Paléolithique supérieur ancien en Europe*, Mémoire Musée de Préhistoire d'Île-de-France, Nemours, ARPAIF: 267-278.
- D'Errico F., Zilhão J., Julien M., Baffier D. and Pelegrin J., 1998. Neanderthal Acculturation in Western Europe? A Critical Review of the Evidence and Its Interpretation. *Current Anthropology*, 39: 1-44.
- D'Errico F. and Sánchez-Goñi M.-F., 2003. Neandertal extinction and the millennial scale climatic variability of OIS 3. *Quaternary Science Reviews*, 22: 769-788.
- Demars P.-Y. and Hublin J.-J., 1989. La Transition Néandertaliens/Hommes de type moderne en Europe occidentale : aspects paléontologiques et culturels. In : B. Vandermeersch (Dir.), *L'Homme de Néandertal vol. 7 : L'extinction*, Actes du Colloque International de Liège, ERAUL, 34: 23-37.
- Discamps, E., 2010. A "hyena event" at the Middle-to-Upper Palaeolithic transition? Preliminary results from South-West of France, *Actas de la 1ª Reunión de científicos sobre cubiles de hiena (y otros grandes carnívoros) en los yacimientos arqueológicos de la Península Ibérica*. Zona arqueológica, Madrid: 510-516.
- Discamps, E., Jaubert, J., Bachellerie, F., in press. Human choices and environmental constraints: deciphering the variability in large game procurement from Mousterian to Aurignacian times (MIS 5-3) in southwestern France. *Quaternary Science Reviews*.
- Faivre J.-Ph., 2008. *Organisation techno-économique des systèmes de production dans le Paléolithique moyen récent du Nord-Est aquitain : Combe-Grenal et Les Fieux*. Thèse Université de Bordeaux 1, 555 p.
- Finlayson Cl., Pacheco Fr. G., Rodríguez-Vidal J., Fa D. A., Gutiérrez-López J. M., Pérez A. S., Finlayson G., Allue E., Preysler J. B. Cáceres I., Carrión J. S. Fernández Jalvo Y., Leed-Owen Ch. P., Jimenez Espejo Fr. J., López P., López Sáez J. A., Riquelme-Cantal J. A., Sánchez Marco A., Guzman Fr. G., Brown K., Fuentes N. Valarino Cl. A., Villapando A., Stringer Ch. B., Martínez Ruiz Fr. & Sakamoto T., 2006. Late survival of neanderthals

- at the southernmost extreme of Europe, *Nature*, 05195: 1-4.
- Flas D., 2006. La transition du Paléolithique moyen au supérieur dans la plaine septentrionale de l'Europe. Les problématiques du Lincombien-Ranisien-Jerzmanowicien, Thèse de l'université de Liège, 2 vol., 377 + 310 p.
- Girard C., 1978. Les industries moustériennes de la grotte de l'Hyène à Arcy-sur-Cure (Yonne), Xle suppl. à *Gallia Préhistoire*, éd. du CNRS, Paris, 224 p.
- Girard C., 1980. Les industries moustériennes de la grotte du Renne à Arcy-sur-Cure (Yonne), *Gallia Préhistoire*, éd. du CNRS, Paris, 23 (1): 1-36.
- Girard C., 1982. Les industries moustériennes de la grotte du Bison à Arcy-sur-Cure (Yonne), *Gallia Préhistoire*, éd. du CNRS, Paris, 25 (1): 107-129.
- Golovanova L. V., Doronichev V. L., 2003. The Middle Paleolithic of the Caucasus. *Journal of World Prehistory*, 17 (1): 71-140.
- Guibert P., Bechtel F., Bourguignon L., Brenet M., Couchoud I., Delagnes A., Delpech F., Detrain L., Duttine M., Folgado M., Jaubert J., Lahaye Ch., Lenoir M., Maureille B., Texier J.-P., Turq A., Vieilleuvigne E. et Ville-neuve G., 2008. Une base de données pour la chronologie du paléolithique moyen dans le Sud-Ouest de la France. In : J. Jaubert, J.-G. Bordes et I. Ortega, Dir., *Les sociétés du Paléolithique dans un Grand Sud-Ouest : nouveaux gisements, nouveaux résultats, nouvelles méthodes*. Mémoire de la Société préhistorique française, XLVII [Journées SPF, Université Bordeaux 1, Talence, 24-25 novembre 2006]: 19-40.
- Jaubert J., 2010a. Les archéoséquences du Paléolithique moyen en Poitou-Chaentes. In : J. Buisson-Catil et J. Primault Dir., *Pré-histoire entre Vienne et Charente. Hommes et sociétés au Paléolithique*, Association des publications chauvinoises, Chauvigny, XXXVIII: 51-55.
- Jaubert J., 2010b. Les premiers peuplements de la France (env. 1 Ma – 0,5 Ma). In : J. Clottes Dir., *La France préhistorique. Un essai d'histoire*, édit. Gallimard, Paris: 21-41.
- Jaubert J., Hublin J.-J., McPherron Sh. P., Soressi M., Bordes J.-G., Claud É., Cochard D., Delagnes A., Mallye J.-B., Mlichel A., Niclot M., Niven L., Park S.-J., Rendu W., Richards M., Richter D., Roussel M., Steele T. E., Texier J.-P. and Thiébaud C., 2008. Paléolithique moyen récent et Paléolithique supérieur ancien à Jonzac (Charente-Maritime) : premiers résultats des campagnes 2004-2006, In : J. Jaubert, J.-G. Bordes and I. Ortega, Dir., *Les sociétés du Paléolithique dans un Grand Sud-Ouest : nouveaux gisements, nouveaux résultats, nouvelles méthodes*. Mémoire de la Société préhistorique française, XLVII [Journées SPF, Université Bordeaux 1, Talence, 24-25 novembre 2006]: 203-243.
- Leroi-Gourhan A., 1958. Étude des restes humains fossiles provenant des Grottes d'Arcy-sur-Cure. *Annales de Paléontologie*, 44: 87-148.
- Lévêque F., Backer A.M. and Guilbaud M. eds, 1993. Context of a Late Neanderthal. Implications of Multidisciplinary Research for the Transition to Upper Paleolithic Adaptations at Saint-Césaire, Charente-maritime, France, *Monographs in World Archaeology* N°16, Madison, Prehistory Press, 131 p.
- Lévêque F. and Vandermeersch, 1980. Découverte de restes humains dans un niveau castelperronien à Saint-Césaire (Charente-Maritime). *C.R. Acad. Sc. Paris*, 291 (D): 187-189.

- Lhomme V., David F. and Thiébaud C. 2005. Les Industries de la fin du Paléolithique moyen de la Grotte Du Bison à Arcy-Sur-Cure (Yonne). Les Premiers Peuplements En Europe. Bar International Series, 1364: 479-499.
- Maillo, J. M., Cabrera-Valdes V. and Bernaldo de Quiros, F, 2004. Le débitage lamellaire dans le Moustérien final de Cantabrie (Espagne): le cas de El Castillo et Cueva Morin. *L'Anthropologie*, 108: 367–393.
- Maureille B., 2002. A lost Neanderthal neonate found, *Nature*, 419: 33.
- Maureille B. and Soressi M., 2000. À 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.
- Mellars P., 1969. The Chronology of Mousterian Industries in the Perigord Region of South-West France, *Proceeding of Prehistoric Society*, 35: 134-171.
- Mellars, P. A. 1996. *The Neanderthal Legacy: An Archaeological Perspective from Western Europe*. Princeton: Princeton University Press.
- Mellars, P. A., 2004. Neanderthals and the modern human colonization of Europe. *Nature*, 432: 461–465.
- Mellars, P. A., 2006. A new radiocarbon revolution and the dispersal of modern humans in Eurasia. *Nature*, 439: 931–935.
- Mellars, P. A., and Stringer, C. B. (Eds.), 1989. *The human revolution*. Edinburgh: Edinburgh University Press.
- Monigal K., 2006. Transit Lounge of Eastern Europe: Multicultural Crimea during the Late Middle Paleolithic and early Upper Paleolithic. In N. J. Conard ed., *When Neanderthals and Modern Humans Met*. Kerns Verlag, Tübingen: 189-211.
- Park S.-J., 2007. Systèmes de production lithique et circulation des matières premières au Paléolithique moyen récent et final. Une approche techno-économique à partir de l'étude des industries lithiques de La Quina (Charente). Thèse Université Paris X Nanterre, 335 p.
- Pelegrin J. 1990. Observations technologiques sur quelques séries du Châtelperronien et du MTA B du Sud-Ouest de la France - Une hypothèse d'évolution. Actes du Colloque International de Nemours, 1988 : Paléolithique moyen récent et Paléolithique supérieur ancien en Europe. Ruptures et transitions : examen critique des documents archéologiques, *Mémoires du Musée de Préhistoire d'Île de France*, 3, Ed. A.P.R.A.I.F., Nemours: 195-201.
- Pelegrin J. 1995. Technologie lithique : le Châtelperronien de Roc de Combe (Lot) et de La Côte (Dordogne). Paris, CNRS, 297 p. (Cahiers du Quaternaire ; 20).
- Pelegrin J. and Soressi M., 2007. Le Châtelperronien et ses rapports avec le Moustérien. In: *Les Néandertaliens, biologie et cultures*, B. Vandermeersch & B. Maureille eds., Paris, CTHS, Documents préhistoriques, 23: 283-296.
- Peresani M. dir., 2003. *Discoid Lithic Technology. Advances and Implications*. Oxford, British Archaeological Reports, 1120.
- Peresani M. 2008. A New Cultural Frontier for the Last Neanderthals: The Uluzzian in Northern Italy, *Current Anthropology*, 49, No4: 725-731.
- Pettitt P. B. 1998. Middle and Early Upper Palaeolithic Crimea: the Radiocarbon Chronology, in: M. Otte éd., «Préhistoire d'Anatolie.

- Genèse de deux mondes», Actes du Colloque internat. Liège 28 avril-3 mai 1997, Liège, ERAUL 85: 329-338.
- Peyrony D. 1930. Le Moustier : ses gisements, ses industries, ses couches archéologiques, *Revue Anthropologique*, t. 40 : 48-76 et 155-176.
- Peyrony, D. 1933. Les industries «aurignaciennes» dans le bassin de la Vézère. *Bulletin de la Société Préhistorique Française* 30 : 543-559.
- Peyrony D. 1948. Une mise au point au sujet de l'industrie de l'abri Audit et de celle de Châtelperron. *Bulletin de la Société préhistorique française*, 45: 34-35.
- Primault J., 2003. Exploitation et diffusion des silex de la région du Grand-Pressigny au Paléolithique. Thèse de l'université de Paris 10-Nanterre, 358 p.
- Rendu, W., Costamagno, S., Meignen, L., Soulier, M.-C., in press. Monospecific faunal spectra in Mousterian contexts: implications for social behavior. *Quaternary International*, available online.
- Richards M. P., Taylor G., Steele T., McPherson Sh. P., Soressi M., Jaubert J. Orschiedt J., Mallye J.-B., Rendu W. and J.-J. Hublin, 2008. Isotopic dietary analysis of a Neanderthal and associated fauna from the site of Jonzac (Charente-Maritime), France. *Journal of Human Evolution*, 55: 179-185.
- Rigaud J. Ph., 1996. L'émergence du Paléolithique supérieur en Europe occidentale. Le rôle du Castelperronien. In : O. Bar-Yoseph, L. Cavallo-Sforza, R. March et M. Piperno (Dir.), *The Lower and Middle Palaeolithic*, Actes des colloques IX et X de l'U.I.S.P.P., 1996, p. 219-223
- Rigaud J.-Ph., 2000. Late Neandertals in the South West of France and the Emergence of the Upper Paleolithic, In C. B. Stringer, R. N. E. Barton & J. C. Finlayson, *Neanderthals on the Edge. Papers from a conference marking the 150th anniversary of the Forbes' Quarry discovery*, Gibraltar, Oxbow Books, p. 27-31.
- Sánchez Goñi, M.F., Landais, A., Fletcher, W.J., Naughton, F., Desprat, S., Duprat, J., 2008. Contrasting impacts of Dansgaard-Oeschger events over a western European latitudinal transect modulated by orbital parameters. *Quaternary Science Reviews* 27 (11-12): 1136-1151.
- Slimak L., 2004. Les dernières expressions du Moustérien entre Loire et Rhône. Thèse Aix-Marseille I Université de Provence, 649 p. + 214 pl. h-t.
- Slimak L., 2008. The Neronian and the historical structure of cultural shifts from Middle to Upper Paleolithic in Mediterranean France, *Journal of Archaeological Science*, 35, p. 2204-2214.
- Soressi M., 2004. From the Mousterian of Acheulian Tradition Type A to Type B : A Change in Technical Tradition, Raw Material, Task, or Settlement Dynamic? In N. J. Conard ed., *Settlement Dynamics of the Middle Palaeolithic and Middle Stone Age. Volume II*. Kerns Verlag, Tübingen, p. 343-366.
- Soressi M., Jones H. L., Rink W. J., Maureille B., Tillier A.-M., 2007. 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*: 1-12.
- Soressi M., Rendu W., Texier J.-P., Claud É., Daulny L., D'Errico F., Laroulandie V., Maureille B., Niclot M. and Tillier A.-m., 2008. Pech-de-l'Azé I (Dordogne, France) : nouveau regard sur un gisement moustérien de tradition acheuléenne connu depuis le XIXe siècle. In : J. Jaubert, J.-G. Bordes and I. Ortega, Dir., *Les sociétés du*

- Paléolithique dans un Grand Sud-Ouest : nouveaux gisements, nouveaux résultats, nouvelles méthodes. Mémoire de la Société préhistorique française, XLVII [Journées SPF, Université Bordeaux 1, Talence, 24-25 novembre 2006]: 95-132.
- Stringer C.B. and Andrews P., 1988. Genetic and fossil evidence for the origin of modern humans. *Science* 239: 1263–1268.
- Thiébaud C., 2003. L'industrie lithique de la couche III du Roc de Marsal (Dordogne) : le problème de l'attribution d'une série lithique au Moustérien à denticulés, *Paléo*, 15: 141-168.
- Thiébaud C., 2005. Le Moustérien à denticulés : Variabilité ou diversité technico-économique ? Thèse Aix-Marseille I Université de Provence, 231 p + 635 p.
- Thiébaud C., 2007. Le Moustérien à denticulés des années cinquante à nos jours : définition et caractérisation. *Bull. de la Soc. Préhist. française*, 104 (3): 461-482.
- Thiébaud C., Meignen L., Lévêque F., 2009. Les dernières occupations de Saint-Césaire (Charente-Maritime, France) : diversité des techniques utilisées et comportements économiques pratiqués. *Bull. de la Soc. Préhist. française*, 106 (4): 691-714.
- Valladas H., Chadelle J.-P., Geneste J.-M., Joron J.-L., Meignen L. and Texier P.J., 1987. Datation par la thermoluminescence de gisements moustériens du sud de la France. *L'Anthropologie*, 91 (1): 211-226.