

Terminal paleolithic and early mesolithic research at Abri Dufaure, Southwest France¹

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RESUMEN

Este artículo presenta algunos resultados preliminares de la excavación y análisis del yacimiento magdaleniense y aziliense de «Abri Dufaure» en Sorde-l'Abbaye, al límite septentrional del País Vasco francés. Se hace balance de los hallazgos arqueológicos y faunísticos, de la crono-estratigrafía y de la estacionalidad de las ocupaciones humanas en el Magdaleniense final (Alleröd). También se hacen unas comparaciones con el yacimiento vecino de «Abri Duruthy». Dufaure y Duruthy forman parte del importante conjunto de yacimientos tardiglaciares a la base del tajo de «Pastou» que domina un vado en el Gabe d'Oloron. «Pastou» representa un lugar de habitación y de caza del reno invernal preferido de los grupos del final del Paleolítico en la región pirenaica occidental.

RESUME

Cet article présente quelques résultats préliminaires de la fouille et analyse du gisement magdalénien et azilien de l'Abri Dufaure à Sorde-l'Abbaye, à la limite septentrionale du Pays Basque français. On résume les trouvailles archéologiques et fauniques, les données chronostratigraphiques et les acquis sur la saisonnalité des occupations humaines au Magdalénien final (Alleröd). On fait également quelques comparaisons avec le gisement voisin de L'Abri Duruthy. Dufaure et Duruthy forment partie de l'important ensemble de gisements tardiglaciaires à la base de la falaise du Pastou qui domine un gué dans le Gabe d'Oloron. Le Pastou était un endroit d'habitation et de chasse au renne hivernal préféré des groupes de la fin du Paléolithique dans la région pyrénéenne occidentale.

The fifth and concluding season of excavation at Abri Dufaure (Sorde-l'Abbaye, Landes) was conducted between mid-May and mid-August, 1984. The general goals of research at Abri Dufaure (analysis of site formation processes, paleoenvironments, chronology, features, activity organization, subsistence, seasonality, and technology at Dufaure; detailed comparison with nearby Abri Duruthy; study of terminal Pleistocene hunter-gatherer adaptations along the north flank of the Pyrenees; comparison of Franco-Pyrenean and Vasco-Cantabrian Magdalenian settlement-subsistence systems) have been outlined elsewhere (e.g., Stratus 1983a, 1983b). Extensive analyses are currently underway, so this report will focus on only a few preliminary results.

A total of about 90m² was carefully excavated to varying depths since 1980. This total is divided between two block excavations (one on the terrace extending in front of the rockshelter dug out in 1900 by H. BREUIL and P. DUBALEN, and the other at the foot of the steep talus slope), plus a trench on the slope connecting the two blocks, and a number of test pits and trenches distributed across the terrace and footslope areas (fig. 1).

Discoveries in 1983 of Gallo-Roman potsherds in the footslope excavation with Magdalenian lithic artifacts, heavily rolled, dense faunal elements (e.g., teeth, astragali, epiphyses) and cobblestones led to the conclusion that the western part of the site on the terrace (where test pits revealed the absence of «in situ» Paleolithic deposits) had slumped through solifluction in late Holocene times. The sequence of erosional and depositional events can be traced in the connecting trench between the terrace break-in-slope and the footslope. Comparison of the intact Magdalenian cobblestone pavements of Stratum 4 on the terrace with the cobble layers of the footslope (Stratum IV) reveals a much higher density of cobbles per unit in the latter area (90 per m² per cobble layer versus 39), as a result of mass accu-

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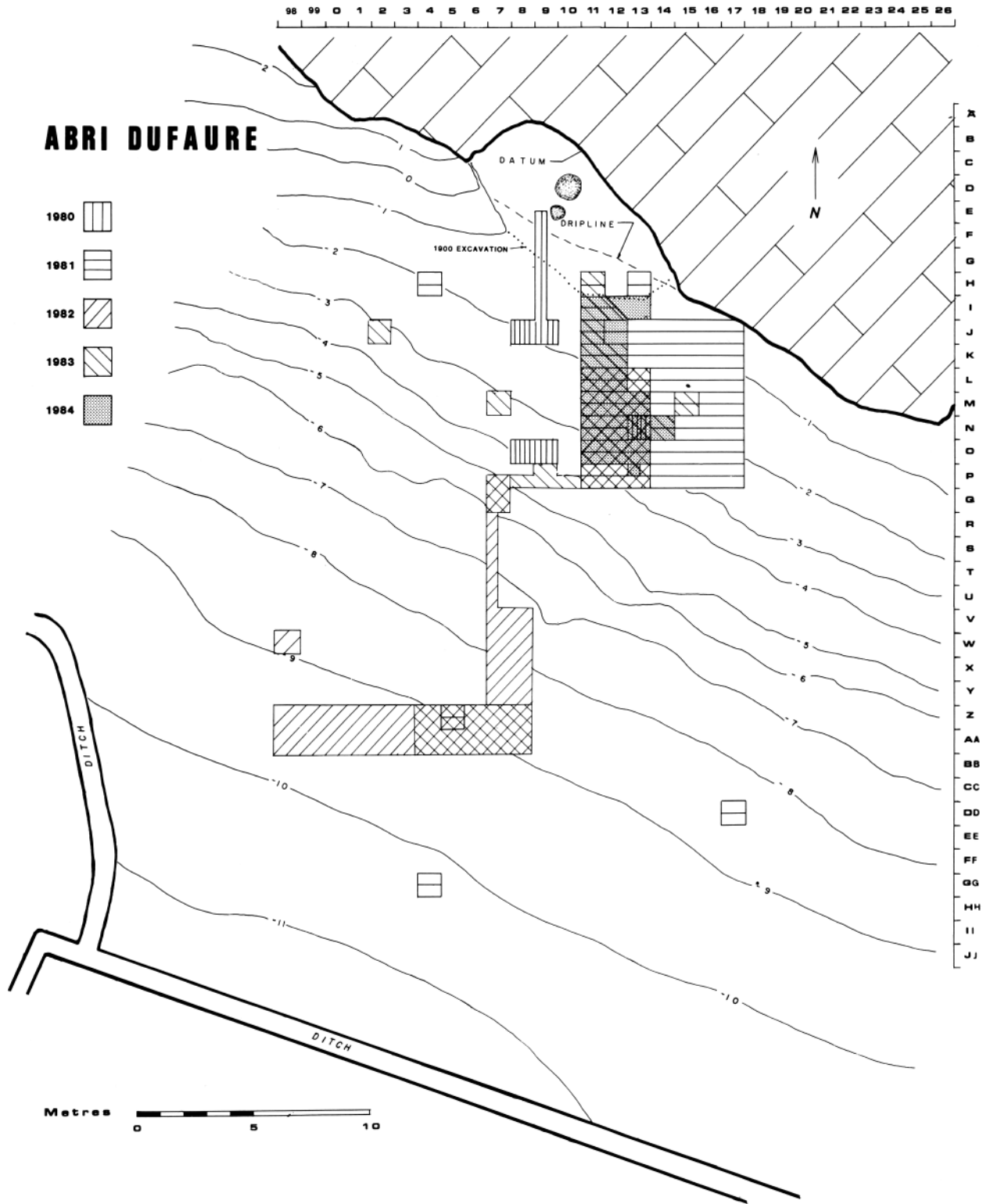


Figure 1: Simplified contour map of the Abri Dufaure site showing locations of the 1900 and 1980-1984 excavations.

mulation at the point of slope angle inflection. According to statistical analysis by J. O'HARA, the cobbles at the footslope are of the same average weight as those of the terrace, whence they were secondarily derived, however the former are distributed in

lobe-like formation. All are manuports originally transported from the Würm terraces of the Gave d'Oloron river adjacent to the site. The foot-slope lithics are qualitatively and quantitatively very similar to those of Stratum 4 on the terrace.

The area of demonstrably intact archeological deposits on the terrace covers about 23m², with an additional 25m² of partially disturbed Sediments pertaining to Stratum 4 and especially Stratum 3 extending to both the east and west of that area. Besides containing regular, constructed cobblestone pavements in Stratum 4, the terrace area yielded large quantities of very well preserved faunal remains (including many fragile elements such as mandibles and two cases of rows of vertebrae in anatomical connection), horizontally restricted clusters of debitage, cores, and tools of rare lithic raw materials, some of which have been refitted (by M Petragia), and broken antler artifacts whose pieces were contiguous with one another. These facts, together with the total lack of ceramics or other modern objects, testify to the integrity of the terrace area, where all excavation efforts were concentrated in 1984. What follows is a brief outline of the main initial findings from the stratified deposits on the terrace, presented in chronological order from bottom to top (Fig. 2).

(and in two small sondages in the midslope and footslope trenches). Awaiting sedimentological and palynological analyses (by H. LAVILLE D. MARGUERIE and M-M. PAQUEREAU (Université de Bordeaux I), this deposit can tentatively be assigned to Dryas I, as it has a radiocarbon date of 14,020 ±340 BP (Ly-3583) which gives an age of 14,360 BP at + 1 sigma. Stratum 6 produced a meager lithic assemblage (974 cores and débitage items plus 81 tools, including 28.4% backed bladelets and 24.7% burins), probably attributable to a Lower-Middle Magdalenian (Table 1). Mammalian faunal remains (under study by J. ALTUNA, and K. MARIEZKURRENA, Sociedad de Ciencias Aranzadi, San Sebastián, (Spain) are well preserved and include at least *Rangifer*, *Equus*, *Bovini* and possibly *Sus*. (The Dufaure avifaunas are being analyzed by A. EASTHAM, University of London).

Stratum 5, now exposed over a fairly broad area of the terrace (18m²), contains lenses and patches of occupation residues often separated by large blocks spalled from the overhanging cliff before and during deposition of the silt matrix, which, according to H. LAVILLE, is granulometrically very similar

Stratum 6, a yellowish, silty clay lying in direct contact with bedrock, was excavated in only 4 m²

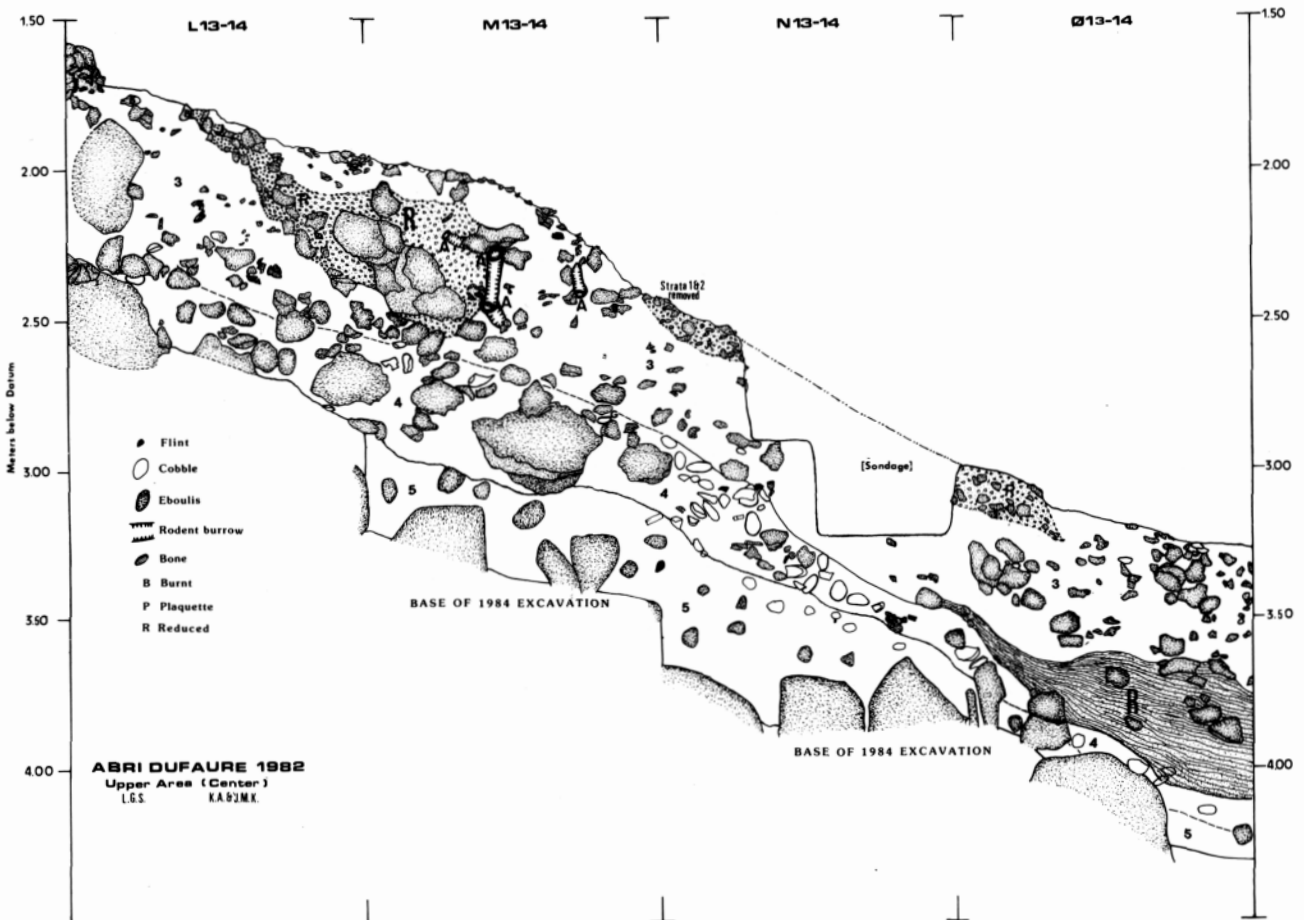


Figure 2: North-South stratigraphic section in the middle of the Upper Slope excavation area at Abri Dufaure. Stratum 6 not exposed; Strata 1 & 2 previously removed.

TABLE 1: SELECTED LITHIC TOOL AND DEBRIS GROUP INDICES

Site Area: Stratum: Category	Upper		Slope	Footslope	
	3	4	5	6	IV
Total Debris (na.)	12.166	45.690	18.912	974	14.853
Primary Debris (%)*	10.6	7.8	7.3	12.4	9.3
Bladelets (%)	10.3	12.9	14.2	12.9	13.6
Total Tools (no.)	320	2536	994	81	737
Debris/Tools (ratio)	38.0	18.0	19.0	12.0	20.2
Backed Bladelets (%) [#]	51.3	45.5	44.0	28.4	50.31 [#]
Endscrapers (%)	15.3	8.9	7.7	8.6	7.6
All Burins (%)	9.7	12.4	13.8	24.7	14.0
Dihedral Burins (%)	7.8	8.6	11.5	11.5	7.7
Truncation Burins (%)	1.9	3.1	3.0	2.0	6.2
Perforators	0.6	2.4	1.8	4.9	2.3

* cores and chunks plus decortication flakes and blades

+ includes Azilian and Microgravette points

[#] percentage exaggerated by high number of fragmentary pieces

TABLE 2: BONE COLLAGEN RADIOCARBON DATES

Stratum	Lab Number	Date (BP)
4 top	Ly-2666	10,910±220
4 middle	Ly-3181	11,750±300
4 middle	Ly-3182	12,030±280
4 base	Ly-3245	12,260±400
5 top	Ly-3591	12,690±230
5 top	Ly-2923	12,990±270
5 base	Ly-3582	14,570±390*
6 top	Ly-3583	14,020±340*

* Ly-3582 and 3583 overlap at 1 sigma

to that of overlying Strata 4 and 3. This level is particularly rich in sandstone slabs -usually reddened by burning (as confirmed by experiments conducted during the 1984 season). It yielded a cache of large, conjoinable cores and flakes of patinated white flint in one corner of square N11. The artifact assemblage lacks harpoons, but includes a few undecorated antler points, bone needles, perforated teeth, and a «baguette demi-ronde» the latter a type traditionally attributed to the Middle Magdalenian, an assignment made plausible by the three ¹⁴C dates ranging from ca. 13,000-14,000 BP when standard deviations are considered (Table 2). A formal assignment to late Dryas I and early Bölling is pending on the environmental analyses. There seems to have been an erosional episode in late Bölling which stripped Stratum 5 from the bedrock sill of the rockshelter and disturbed areas of the deposits on the upper slope. Stratum 5 yielded 18,912 knapping debris and 994 retouched tools. The latter are dominated by backed bladelets (44.0%) and burins (13.8%). The abundant faunal assemblage is dominated by *Rangifer*, *Equus* and *Bovini*, with some *Cervus*. Early suspicions that Stratum 5 contained human remains (STRAUS 1983c: 17) proved unfounded when the fragments were inspected by E. TRINKAUS (University of New Mexico).

Stratum 4, uncovered over a total of some 30m², consists of a series of cobblestone pavements (in some areas totalling ten or more for an aggregate thickness of up to 50 cm). No clearcut

hearths were found (these were apparently concentrated in the rockshelter per se and included birch wood as fuel according to the description of Breuil and Dubalen [1901], but burnt limestone *éboulis* and firecracked cobbles are common. A wood charcoal identification by J. L. VERNET (Université de Montpellier) indicates the use of at least juniper for fuel. Stratum 4 is dated by a coherent series of radiocarbon dates (on bone collagen) between c.12,000-c.11,000 BP, corresponding closely to the temperate, humid Alleröd oscillation, as indicated by preliminary palynological results. The rich faunal assemblage is dominated by *Rangifer* (few of whose low-utility anatomical parts are represented), with substantial representations of *Equus* and *Bovini*, particularly towards the base of the level. *Cervus*, as well as some fish, birds, and lagomorphs are also represented. Seven of a total of 37 teeth sectioned for cementum analysis by A. SPIESS (Maine Historic Preservation Commission, Augusta) have yielded definite seasonality information. All seven individual animals (5 reindeer, a red deer and a bovine) were killed in the cold season. One pike (*Esox lusius*) vertebra shows evidence of spring fishing according to O. LEGALL (Université de Bordeaux I). Further seasonality data (which may confirm the lack of summer kills) will be forthcoming with ALTUNA'S study of manibular tooth eruption sequences.

The Stratum 4 osseous industry now includes one whole cylindrical section, unilaterally barbed harpoon, and two nearly identical harpoon bases, all found in the lower pavements of the stratum. Breuil and Dubalen (1901) had found 6 harpoon fragments in the cobble pavement layer («foyer inférieur») of the rockshelter, and we found probable additional fragments of one of these in the backdirt at the edge of their excavation. These harpoons are diagnostic of the Upper Magdalenian. In addition, the new collections include 26 generally undecorated *sagaie* fragments (with double and single bevel bases), 7 needle fragments, 2 perforated teeth, and various other marked bones (awls, wands, etc.). The large lithic assemblage consists of 45,690 knapping debris and 2536 retouched tools. Secondary debitage (bladelets, trimming flakes, etc.) are notably abundant, whereas cores and decortication flakes are relatively few. The tool fraction is dominated by backed bladelets (45.5%); burins (12.4%) outnumber endscrapers (8.9%). Special types often found in the terminal Magdalenian are found in moderate-small numbers: Azilian Hamburgian, Teyjat and shouldered points, Lacan burins, geometric microliths. Pilot high-magnification microwear analyses by K. AKOSHIMA (Tohoku University, Sendai, Japan) have so far been somewhat inconclusive, due to heavy patination on most of the flints. However, it is at least clear

that hidescraping (using endscrapers) was one of the frequent activities at Abri Dufaure.

Stratum 3 - a rockfall deposit with a colluvial silt matrix - is as yet undated, but probably pertains to the Dryas III and early Preboreal. Charcoal fragments pertain to cherry, pine, and especially oak, which may also be represented by a possible charred acorn fragment. The only substantial occupation residues—including a small cobblestone layer—are localized near the edge of the old excavation and probably correspond to the *éboulis-rich* upper part of the «*foyer supérieur*» of BREUIL and DUBALEN (1901), which yielded a flat section Azilian harpoon. The scattered tools, debitage, and fragmented faunal remains found further down the terrace may have been washed or tossed from the restricted habitation area in the rockshelter and along the cliff. We found no Azilian harpoons, but we did uncover an engraved cobble and two ochre-stained cobbles (as did our predecessors). The small lithic assemblage (12,166 knapping debris and only 320 tools) is heavily dominated by backed bladelets (51.3%). (Azilian points themselves make up 6.6% of the tool total.) In the only such case in the Dufaure sequence, endscrapers (15.3%) outnumber burins (9.7%), and many of the former are on short flakes, as is also characteristic of the Azilian. Although the small faunal assemblage appears to be dominated by red deer, identifications by J. ALTUNA-K. MARIEZKURRENA and A. SPIESS confirm the presence of reindeer throughout this stratum. Strata 2 and 1 are recent colluvial sediments, old backdirt, and humus.

Although the multidisciplinary analyses are just beginning, a few notable similarities and differences between Dufaure and Duruthy—the westernmost of the four-site Pastou Cliff site cluster, excavated by R ARAMBOUROU (1978)—can already be highlighted. Similarities include:

- 1). The chronostratigraphy of Dufaure closely matches that of the upper sequence at Duruthy;
- 2). The Azilian occupations of both sites were sparse and spatially restricted to the small rockshelters per se;
- 3). Both sites contain reindeer remains in the Azilian (Dryas III), and even Preboreal, proving the late survival of a distinctive Rangifer population along the northern flank of the Pyrenees, Perhaps even after their extirpation in the Périgord (DELPECH 1983).
- 4). Both sites have extensive, thick, frequently rebuilt cobblestone pavements dating to the Alleröd (terminal Magdalenian) and lacking clearcut hearths in the terrace area;

- 5). In both cases these late Magdalenian occupations seem to have taken place exclusively in the cold season and were significantly involved in the hunting of reindeer (as well as horses and bison), possibly at nearby river crossings on the migration route between mountain and coastal pastures (as further suggested by the site of La Barthe Claverie opposite the Pastou Cliff).

Differences include;

- 1). Duruthy's greater areal extent and stratigraphic depth;
- 2). Duruthy's greater abundance of harpoons and salmon remains in the terminal Magdalenian cobblestone stratum (Couche 3);
- 3). The presence of postholes in Duruthy's pavements;
- 4). Duruthy's wealth of works of mobile art (sculptures, engravings, ornaments) in the Middle Magdalenian stratum (Couche 4), which nevertheless may temporally correspond to Dufaure Stratum 5, totally lacking in such objects typical of the Pyrenean «Magdalenian IV».

Present and future research will focus on the role of Abri Dufaure in the terminal Pleistocene Pastou settlement location and on the role of the site and the associated sites of Duruthy, Grand Pastou, and Petit Pastou in the broader contexts of the western Pyrenees and the Franco-Cantabrian region as a whole.

REFERENCES CITED

- ARAMBOUROU, R.
1978. Le Gisement Préhistorique de Duruthy à Sorde-l'Abbaye (Landes). *Mémoires de la Société Préhistorique Française* 13.
- BREUIL, H. AND P. DUBALEN
1901. Fouilles d'un abri à Sordes en 1900. *Revue de l'Ecole d'Anthropologie de Paris* 8, 251-268.
- DELPECH, F.
1983. *Les Faunes du Paléolithique Supérieur dans le Sud-Ouest de la France*. Paris: CNRS.
- STRAUS, L. G.
1983a. Paleolithic investigations in Les Landes, France. *Current Anthropology* 24: 388-389.
1983b. The Abri Dufaure Prehistoric Project: Preliminary report on the 1980, 1981 and 1982 field seasons. *Journal of Field Archaeology* 10: 371-378.
1983c. Excavations at Abri Dufaure. *Old World Archaeology Newsletter* 7(3): 15-18.