

Article

The Cave of Isturitz (West Pyrenees, France): One Century of Research in Paleolithic Parietal Art

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Received: 24 September 2013; in revised form: 5 November 2013 / Accepted: 7 November 2013 / Published: 14 November 2013

Abstract: The cave of Isturitz is one of the most important archaeological sites of the prehistory of Western Europe. Human occupations followed each other in the cavity from at least the Middle Paleolithic to the Roman age. In 1913, Passermard started archaeological excavations there, and a calcite pillar was discovered next to the original entrance that was sculpted with a dozen of animal representations. In this excavation, the Magdalenian levels yielded a considerable quantity of portable art objects. In the last few years, several workers have resumed the study of those pieces. Since 2011, we have created a research team for the study of the parietal figures of the cave, as well as other elements, for example the objects embedded in the walls. We present here our first results, which improve in the understanding of the artistic activities of Upper Palaeolithic peoples by shedding light at the art analyzed in Isturitz.

Keywords: cave art; Isturitz; Magdalenian; Basque Country; engravings

1. Introduction: Gaztelu hill

Isturitz cave is one of a series of cavities in the Gaztelu hill (towns of Isturitz and Saint-Martin-d'Arberoue, Pyrénées-Atlantiques), a major site for Franco-Cantabrian prehistory. The archeological research has focused on Isturitz, Oxocelhaya-Hariztoya and Erberua.

Figure 1. Location of the Isturitz cave among the decorated caves of the Bay of Biscay.



The Isturitz cave has a general northwest/southeast orientation. Probably, originally it was a very wide gallery, more than 120 m long and up to 50 m wide in some places, open at both ends. Successive collapses progressively sealed off the southeast entrance, through which the Arberoue River entered. The entrance from the other direction also was affected by rock fall that did not close it totally. Based on the various observations made, the corresponding porches or rock-shelters must have had imposing dimensions, especially the one located on the side of the town of Saint-Martin-d'Arberoue, oriented to the SW. Our observations on the shape of this entrance at the beginning of the middle Paleolithic suggest a width between 15 and 20 m and a height of close to 10 m. Such an opening would definitely have been visible from far away and could have, very early on, attracted the prehistoric populations who spent time in the valley. However, during this period of history, only the entrance located in the town of Isturitz was usable; this fact explains the name of the cavity, although most of its area is in Saint-Martin-d'Arberoue.

The Isturitz cave network is generally divided into two parts: the Hall of Saint-Martin (or South Hall) and the Main Hall or Hall of Isturitz (or North Hall). In this paper we suggest the addition of two “adjoining” halls: the Rhinolophus Hall and the Phosphate Hall, as well as various small adjacent galleries connecting the various sectors.

Figure 2. Current entrance for touristic visitors to the Isturitz cave.



The Hall of Isturitz is striking because of its size with an area of more than 1500 m², underscored by ceiling heights of as much as 15 m in some places. At present, its floor shows a double downward slope or declivity, coming from its two ends, which converge near the stairway dug out in 1953 in order to provide access to the Oxocelhaya network. The maximum declivity, at the foot of the entrance on the Isturitz side, corresponds to a large talus, now formed from sterile material from older excavations by R. de Saint-Périer during the years 1928-1949. The downwards slope in this talus seems to be very close to what existed originally. Shreds of flowstone floors still attached to the walls bear witness to a large calcite covering that was destroyed during these excavations. Furthermore, this part must have been cluttered by large fallen blocks, that were described by past excavators and particularly visible on a section of the entrance published by R. de Saint-Périer (Saint-Périer, 1936, p. 5; Figure 11) [20]. The declivity near the Rhinolophus Hall, where research was limited to a few borings, maintains the stalagmite covering that has disappeared elsewhere. At the “large pillar”, this flowstone floor covers directly the bedrock, which protrudes here. In its extension, a low passage, where the limestone outcropped under a few dozen centimeters of sediment, leads to the Hall of Saint-Martin.

The shape of the Hall of Saint-Martin, much less affected by earlier excavations, is quite different. In addition to a smaller surface area, it is distinguished from its neighbor by an arch which barely exceeds 2 m in height and by the very numerous concretions—that is, speleothemes, stalagmites and stalagmites forming columns—which frequently link its ceiling with a floor that is no more than 0.30

m thick in places. It is only destroyed in the part near the Phosphates Hall and within two galleries, about 10 and 20 meters long respectively, which open out not far from the southeast entrance.

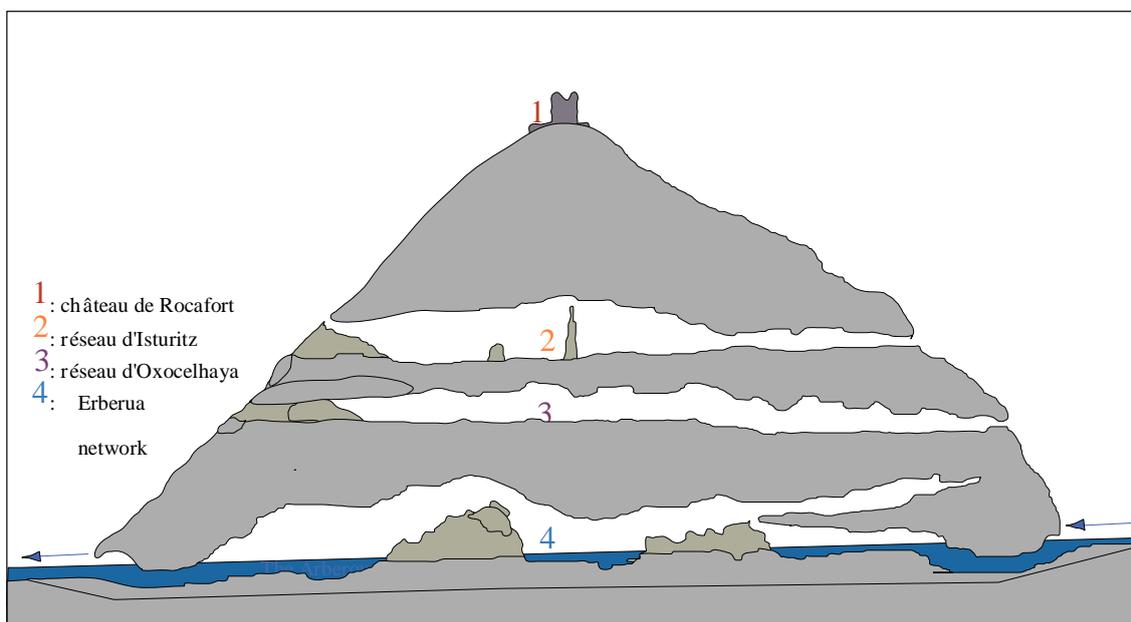
Within the Isturitz cave, several dozen years of excavations during the 20th century revealed a very substantial archaeological stratigraphy covering the middle and upper Paleolithic. During 1912 the excavations began under the direction of E. Passemard, until 1922. The Count and Countess of Saint-Périer continued the work until 1959. In 1996, research was resumed at the initiative of the Regional Archeology Service of Aquitaine.

After a series of test excavations which showed very high archeological potential, especially for the Aurignacian, excavations were begun in 1999 in the Saint-Martin Hall of the Isturitz cave, under the responsibility of a Franco-Spanish team, with the main objective of shedding light on the following issues:

- The transition between the middle Paleolithic and the upper Paleolithic;
- The first phases of the Aurignacian;
- The processes of sedimentation.

This operation continued from 2000 until 2010 under the direction of C. Normand.

Figure 3. Schematic cross section of the Gaztelu hill.



The Oxocelhaya-Hariztoya cave was discovered in 1929 by the owner of the Hariztoya mill, J. P. Etchegaray. The part just after the entrance was named Hariztoya while the remainder received the name of the Oxocelhaya farm to which it belonged. The cave network reaches some 200 m horizontal development or more; and it ends on a large mass covered with flowstone, with no exit on the Isturitz slope. Its ceiling height exceeds 15 m in places, in particular in its median part where there is an accumulation of enormous blocks that collapsed from the roof. Speleothemes are abundant everywhere and often take on spectacular forms that make this a significant show-cave.

The archeological discoveries appeared very rapidly because, as of his first visits, J. P. Etchegaray collected, from the surface of the first hall, two whole Bronze Age vases, one with finger impressed decorations, a bell-shaped cup and various human remains (Saint-Périer, 1952, p. 2; Laplace, Larribau, 1984) [8,21]. This author suggests that this sector of the cavity had a funerary function. Red dots were also observed on the walls (Saint-Périer, op. cit.).

In 1955-56, J.M. de Barandiaran, assisted by P. Boucher and G. Laplace, undertook excavations in the Ezker Hall, in the continuity of the entrance. They found here a rather deep stratigraphy composed, from bottom to top, of a sterile plastic clay, a clay layer with a rare and cryoturbated Mousterian and many cave bear bones *Ursus spelaeus*, and another clay layer containing a probable Aurignacian and a silt layer with post-glacial elements (Laplace, Larribau, op. cit.).

During an exploration campaign in 1955, G. Laplace discovered parietal figures in the terminal gallery, referred to since then as the “Laplace Gallery”. In 1982, the continuation of the test excavations allowed J.-D. Larribau and M. Lauga to find new parietal art works in a lateral gallery, now the “Larribau Gallery”. The first set includes, among other things, a frieze of three large horses made of a series of fine etchings on the very hard rock in this place, then a small complete horse followed by a the head and neck (protomos) drawn in black lines. A little further on, the sinuous contour of a flake of the wall was used to portray the dorsal line of a bison represented vertically. Lastly, near the last massif, a small engraved hind a well known representation on the Vasco-Cantabrian Coast. Among the figurations of the “Larribau Gallery”, the most remarkable are two horses traced on clay and a complex set in which several horses were engraved. One of these, named “large horse with halter”, measures close to 1.5 m long (Laplace, Larribau, op. cit.). Moreover, for several years now, many “expressions” in red paint (“spots”, pitting, painted pillars, *etc.*) have been detected practically throughout the cavity (Labarge, 2003) [5]. It should also be noted that, around 1978, clandestine excavations destroyed a zone with very rich in remains of cave bears in the Hariztoya sector.

In the lowest level of the cave system, the Erberua cave, which has the river running through it, had long remained unexplored. The first attempts to cross the downstream sump by G. Laplace, took place around 1955 after P. Boucher had noticed an archeological filling under its arch with Mousterian tools. (P. Boucher pers. comm). These first attempts failed, as did those in 1960 by Messrs. Azéma and Lacroux. Thirteen years later, this sump was conquered by a team composed of C. Barroumes, J.D. Larribau and J.M. Lavigne. The Erberua network was then progressively explored and in 1975, the first rock art was discovered by J.D. Larribau, J.C. Guyonnau and J.M. Lavigne (Larribau, Prudhomme, 1989) [9]. Since then and over the course of about 15 years, many expeditions within this network, with the participation of M. Lauga and S. Prudhomme very significantly increased the corpus of recognized rock art manifestations (Prudhomme, 1990) [17].

The network presents a very complex structure which is difficult to grasp precisely because no comprehensive topography has been yet published. However, the available information suggests the existence of galleries of considerable dimensions downstream, with a “keyhole” section 15 to 20 m high, followed, after the junction with a secondary gallery of large dimensions, by the beginnings of several upper galleries (Larribau, Prudhomme, 1989) [9]. This description suggests that there could be at least two superposed and/or juxtaposed networks, with the one located in the upper part collapsed in places.

Traces of human action are very abundant, especially on the walls, with more than one hundred signs and figures inventoried so far (Larribau, Prudhomme, op. cit.). Our attention is drawn by the variety of the themes portrayed (various animals including horses, bovines, caprinae, cervidae, possible felines, fish, *etc.*, anthropomorphs, hand stencils, varied signs.), the variety of the techniques used (etching, drawing, painting, clay modeling, sometimes intensely using the natural reliefs) and of the substances involved (hard or soft limestone walls, clay walls, floors). There are in addition many bones inserted into fissures, some structures noticed on the ground, particularly blocks of limestone arranged in a circle and often including a rib or tooth of an herbivore in a more or less central position. Lastly, in the area close to the southeastern slope, the vast spreading of a multitude of artefacts (knapped flint, fauna) suggests the presence of human habitation.

2. The cave art of Isturitz: History of the research

The research on the parietal art of the Isturitz cave began at the same time as the archeological excavations. In 1912 E. Passemard visited the cave for the first time and the work began immediately and ran until 1922 (Passemard, 1944) [15].

The inspection of the walls was nevertheless fruitless until the discovery of the Engraved Pillar, which was found during the excavations in the Main Hall.

The first mention of the Isturitz etchings was at the October 23, 1913 session of the Société Préhistorique de France. There was mention of a reindeer, two does and other forms in bas-relief and also traces of paint (Passemard, 1913a) [11]. Later on, “several bas-reliefs or very primitive sculptures on walls, representing reindeer, horses, does, mammoths, etc.” were mentioned (Passemard, 1913b) [12].

Figure 4. First reference to the parietal sculptures of the Isturitz cave (Passemard, 1913a) [11].



Découverte de Bas-reliefs et de Peintures dans les Grottes d'Isturitz (B.-P.).

[*Prise de date*].

M. EM. PASSEMARD (Melun, S.-et-M.). — Je viens de découvrir un très beau bas-relief sur roche, représentant un Renne entier et 2 biches, dont une percée de traits. Le tout a un mètre de haut sur un mètre de large environ. — J'ai, de plus, relevé des traces de *Peintures* et des formes qui doivent-être d'autres bas-reliefs. Ces trouvailles ont été faites dans les Grottes d'Isturitz (B.-P.).



In 1913 and 1914, the layers of sediment that covered the figures were removed and the panel was also washed. In 1915 and 1916 the surveys were carried out and photographs were taken (Passemard, 1918) [13]. Some 15 figures were inventoried: “composed of a reindeer, a doe and a stag; then a little

higher up in the western direction, a large mammoth head followed a little below it by a small ibex head, itself placed below a small ruminant head, while above we see the folded back feet of a galloping animal. All the way at the top in the part cleared with a hammer, we can make out a bovine head, on top of an indeterminable animal, whose questionable feet are thought to join the back of a small magnificently sculpted horse. Immediately below we see a crude figure which can only be a carnivore. Moving towards the West, we can make out a little bit further up the extended leg of a horse whose head disappeared in a hole in a stalagmite. All the way at the end of this side, the large stalagmitic flowstone which covers almost the entire height can be interpreted as the hindquarters of the ruminant. On its western face, the rock shows only two sculptures: one bear head and one horse head” (Passemar, *op. cit.*).

Some 15 figures were reported but only the most visible ones were listed and identified with certainty. For the remainder, there is no graphic document and the descriptions are sometimes unclear in the publication of E. Passemar.

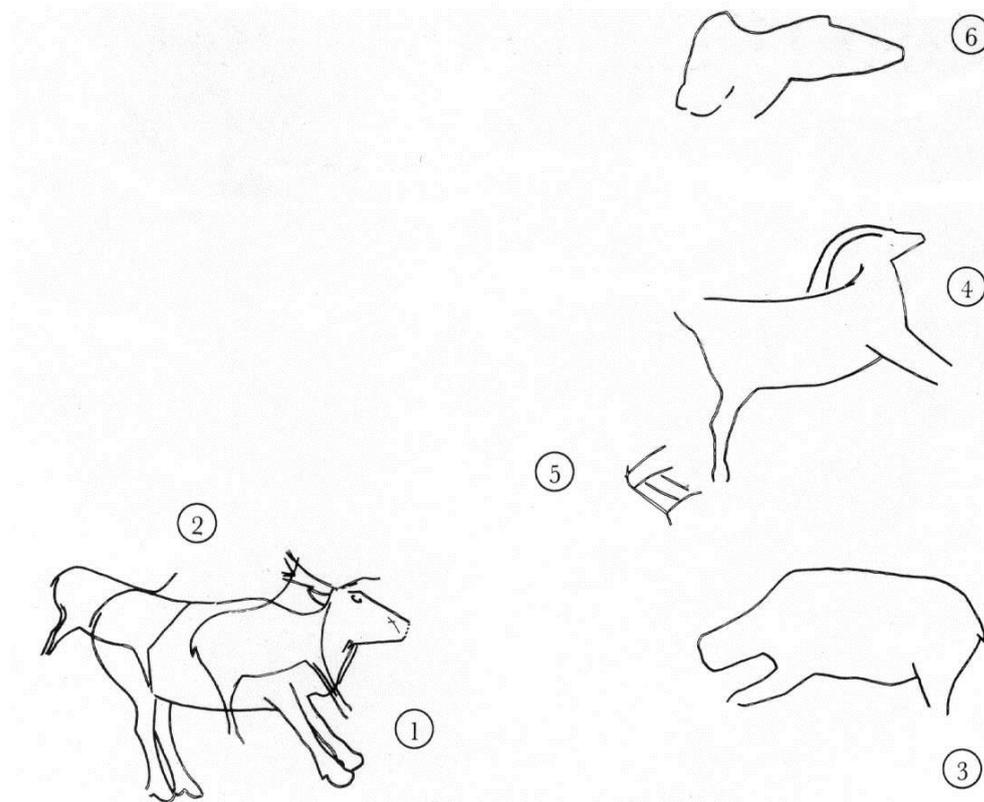
Figure 5. Cast of the wall sculptures of the Isturitz cave (Passemar, 1918) [13].



After the research by Passemar, a further revision was carried out of the Pillar in 1972. At the time, the artificial tunnel for visiting Oxocelhaya was being made, and this hindered access to the engravings. The records of I. Barandiaran show seven “indisputable” figures including a reindeer, two cervidae, a bear, an ibex, a comb-shaped sign and a horse protomos (Laplace, 1984) [7]. In this study, half of the figures inventoried by E. Passemar are ruled out.

In 1994, a white paper on the archeological heritage of the Gaztelu hill was drawn up under the direction of A. Turq and C. Normand. Several objectives were set over the course of three years, including doing a detailed survey of the state of conservation of the parietal works of the two networks, Erberua and Oxocelhaya. However, it was not possible to do this for various reasons. Starting in 1996, when the team of F. Rouzaud was carrying out the topography of the Isturitz cave, prehistoric human activities were detected on the walls, transforming our understanding of the art of Isturitz, which until then had only been acknowledged for the central pillar. In the Saint Martin hall, the topographers discovered near the excavation site, the dorsal line of a bison, in a chamber close to the entrance, red pitting, a bovine tooth inserted in a fissure and in the sepulchral zone, three red vertical lines. In the Rhinolophus hall, a black dorsal line was recognized (Normand, Turq, 2006) [10]. A first systematic analysis of the inserted objects in Isturitz was finally undertaken by A. Labarge (2012) [6].

Figure 6. Details from the Engraved Pillar of the Isturitz Hall (Laplace, 1984) [7].



3. The current research project. A multi-disciplinary approach

Given the history of the Gaztelu site reviewed above, it seems pertinent to resume the study of the parietal art, establishing links between it and the habitation site and portable art. So far, the only comprehensive study remains unpublished (Prudhomme 1990) [17] and the later research demonstrated real shortcomings in the knowledge of the whole site (Labarge, 2010) [6]. The potential of the hill in terms of parietal art remains to be explored.

In 2010, to try to address this lack of knowledge, a new research team was formed under the direction of Diego Garate and with the joint coordination of Joëlle Darricau, Aude Labarge, Christian Normand and Olivia Rivero. This project was approved by the Regional Archeology Service and received financial support from the Direction Régionale des Affaires Culturelles (DRAC) of Aquitaine. Mrs. Joëlle Darricau, the owner of the caves, and the Association Gaztelu also provided logistical support for the project.

Several work orientations were defined in accordance with the main objectives to be pursued in this project of fully studying the parietal art in conjunction with the other human activities and the karstic network itself:

- Accurate topographic map of the caves.
- Study of the geology.
- 3D restitution of the cavities.
- Study of the Paleolithic parietal art.
- Study of other cave vestiges (inserted bone and flint).
- ¹⁴C and U/Th dating.
- Study of the relations between the habitat and the art.
- Stylistic, plastic and technological analyses of the art.

These various research approaches will be developed over the course of six campaigns (2010-2016) in the Isturitz and Oxocelhaya caves. To meet the needs of this project, an international and interdisciplinary team has been assembled.

Lastly, the research will allow us to shed light on the role that the Isturitz and Oxocelhaya caves play within the Late Glacial symbolic graphic activity in the Pyreneo-Cantabrian region.

4. Research methodology

With regard to the parietal traces (graphic items and deposits) of the Isturitz cave, the field work was carried out in 2011 and 2012, with specific analytics in 2013.

We undertook a general survey for images, collection of literature, documenting the prehistoric images, the localization and the restitution of each one of the graphic entities in the cavity according to the specific methodology detailed below:

- *Systematic prospection of the walls and ceilings*: Reconnaissance of the parietal surfaces, with the localization and identification of the graphic entities and wall deposits. This step is thus accompanied and followed the revelation of possible new graphic manifestations. To do this, meticulous prospection of the surfaces was carried out, following the topographic network by sectors in each hall. The work was carried out by three independent teams of two people each. The sectors were prospected by each team and the results were then compared.
- *Archaeometric documentation and cataloguing of the wall deposits*: These are recordings on standardized sheets of each deposit on the walls that was initially observed. In the established

sheets, we chose parts concerning the situation and the terminology, the description of the panel, the support and the deposit.

- *Photographic documentation:* The photographic documentation was done for each graphic entity and each deposit (including a series of macrophotographs of details of the contours and specific points for the reading of the lines) and for the entire panel. To do this, we used a Nikon D-90 digital camera with two incorporated Nikon SB-900 flashes and specific lenses.
- *Spatial organization:* The project's topography team used a theodolite to record each graphic entity and deposit. Afterwards, their coordinates will be inserted in the map of the cave once the sorting of the laser-scanner data has been finished.
- *Graphic restitution of the parietal manifestations:* The purpose of the reading is to understand and to extract the information provided, both by the substrate and by the anthropic manifestations in order to analyze and to reproduce this information. The reading is made from digital images, notes and sketches made facing the wall. This data is then processed with the help of drawing and illustration software (Photoshop©). By overlaying the images, we can process the various levels of information and supply all of the information (coloring material, engraving, relief of the support, speleothems, *etc.*) or a part of these on the final result (JPEG or TIFF format). In a third step, a return to the wall is indispensable in order to verify the accuracy of the reading and to make corrections if necessary. This technique perfectly meets the requirements of conservation because no contact with the wall is necessary at any time.

5. The parietal art in the light of the new studies.

In terms of the ample dimensions of Isturitz cave the amount of parietal art is modest. Twenty-two graphic entities were inventoried, painted in red, including spots, points and lines with no zoomorphic images, and 14 engraved graphic entities, most of them animals:

- In the Saint-Martin hall, the paintings are concentrated in one of the two small chambers to the right of the entrance and these are mainly groups of points and spots, in a sector where there is also a concentration of deposited objects—but which are also present in the other zones—, inserted after the making of the graphic items (in cases where there is superposition of course). Certain graphic items could be the vestiges of a zoomorphic representation, but with the current state of conservation we cannot be sure.
- In the Phosphate Hall, the figures are concentrated in the initial section on the right, practically at the height of the original floor. They are spots with little coloring and with no apparent organization, offering a random or not very structured appearance. It is also in this sector of the hall that we find the largest concentration of deposited objects, although they are also present in all of the other sectors of the hall.
- In the Large Hall, only a very diffuse red spot almost totally covered by calcite and clay was identified. In this case there are no deposits of associated objects.

In the Engraved Pillar which is already known, we reinterpreted the engravings, which are still being studied. Part of these results was presented above.

- In the Sepulchral hall we catalogued a series of bars and a red spot, in a space where there were also objects placed in the wall.
- In the Collapsed galleries, there is a total absence of deposited objects, but two red spots were found, one of which is large.

Table 1. Example of a deposit recording sheet, Isturitz cave.

Grotte	Isturitz	Date	05/11/2012	Auteur	Aude Labarge
Dépôt	IST.SMT.III.A.O.14	Panneau	A	Secteur	III Salle Saint Martin Coord 6615

MESURES DU DÉPÔT en centimètres		
Long max	0.6	
Larg max	0.4	
Hauteur au sol actuel	185.5	
Hauteur d'ouverture du contenant	1	
Distance du dépôt par rapport à la bordure	0.9	

PANNEAU	
Lieu	<input type="checkbox"/> Sol <input checked="" type="checkbox"/> Paroi <input type="checkbox"/> Paroi plafonnante <input type="checkbox"/> Pilier <input type="checkbox"/> Colonne <input type="checkbox"/> Bloc <input type="checkbox"/> Autre...
Accès	<input type="checkbox"/> Difficile <input type="checkbox"/> Normal <input checked="" type="checkbox"/> Facile
Détail du panneau Le panneau se situe dans le second diverticule de la salle Saint Martin, sur la paroi gauche où se trouve la surface peinte rouge. Le panneau est composé de deux surfaces délimitées par des crêtes en ogive : la surface concernée se situe entre l'ouverture du petit diverticule et le milieu de la galerie.	

SUPPORT	
Pendage	<input type="checkbox"/> Vertical <input type="checkbox"/> 45° <input checked="" type="checkbox"/> Horizontal <input type="checkbox"/> 135°
Contenant	<input checked="" type="checkbox"/> Fissure <input type="checkbox"/> Anfractuosité <input type="checkbox"/> Entablement <input type="checkbox"/> Autre...
Situation dans le support	<input checked="" type="checkbox"/> Associé <input type="checkbox"/> Isolé
Emplacement dans le contenant	<input checked="" type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d
Détail du support Le support est très fissuré : les fissures ne sont pas régulières, elles sont à fort entablement, généralement à larges ouvertures : les fissures sont profondes et étroites : La fissure concernée est très irrégulière avec resserrement partiel des ouvertures.	

DEPOT	
Matériau	<input checked="" type="checkbox"/> Os <input type="checkbox"/> Silex <input type="checkbox"/> Colorant <input type="checkbox"/> Autre...
Visibilité	<input checked="" type="checkbox"/> Réduite <input type="checkbox"/> Cachée <input type="checkbox"/> Autre...
Altérations	<input type="checkbox"/> Calcification <input checked="" type="checkbox"/> Patine <input type="checkbox"/> Fracture récente <input type="checkbox"/> Délitage <input type="checkbox"/> Néant <input type="checkbox"/> Autre.
Concrétionnement ancien	<input checked="" type="checkbox"/> Base <input type="checkbox"/> Sommet <input type="checkbox"/> Recouvrant <input type="checkbox"/> Néant
Insertion	<input checked="" type="checkbox"/> En Retrait <input type="checkbox"/> En Saillie <input type="checkbox"/> Affleurant <input type="checkbox"/> Autre...
Orientation d'insertion	<input checked="" type="checkbox"/> Perpendiculaire <input type="checkbox"/> Parallèle <input type="checkbox"/> Oblique <input type="checkbox"/> Non déterminable
Pression d'insertion	<input type="checkbox"/> Oui <input checked="" type="checkbox"/> Non <input type="checkbox"/> Non Déterminable
Fracturation extérieure d'insertion	<input type="checkbox"/> Languette Sup <input type="checkbox"/> Languette Inf <input type="checkbox"/> Dents de scie <input type="checkbox"/> ND <input checked="" type="checkbox"/> Néant
Potential d'information	<input type="checkbox"/> Oui <input checked="" type="checkbox"/> Non <input type="checkbox"/> Détail.....
Datation envisageable	<input type="checkbox"/> Oui <input checked="" type="checkbox"/> Non <input type="checkbox"/> Ind.
Détermination spécialiste	<input type="checkbox"/> Oui <input checked="" type="checkbox"/> Non <input type="checkbox"/> Ind.
Détail du Dépôt Petite esquille d'os	

6. The parietal art in the light of the new studies.

In terms of the ample dimensions of Isturitz cave the amount of parietal art is modest. 22 graphic entities were inventoried, painted in red, including spots, points and lines with no zoomorphic images, and 14 engraved graphic entities, most of them animals:

- In the Saint-Martin hall, the paintings are concentrated in one of the two small chambers to the right of the entrance and these are mainly groups of points and spots, in a sector where there is also a concentration of deposited objects—but which are also present in the other zones—, inserted after the making of the graphic items (in cases where there is superposition of course). Certain graphic items could be the vestiges of a zoomorphic representation, but with the current state of conservation we cannot be sure.
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In the Engraved Pillar, which is already known, we reinterpreted the etchings, which are still being studied. Part of these results was presented above.

- In the Sepulchral hall we catalogued a series of bars and a red spot, in a space where there were also objects placed in the wall.
- In the Collapsed galleries, there is a total absence of deposited objects, but two red spots were found, one of which is large.

Figure 7. Localization of the graphic units of the Isturitz cave (Diego Garate based on Laplace, 1984) [7].

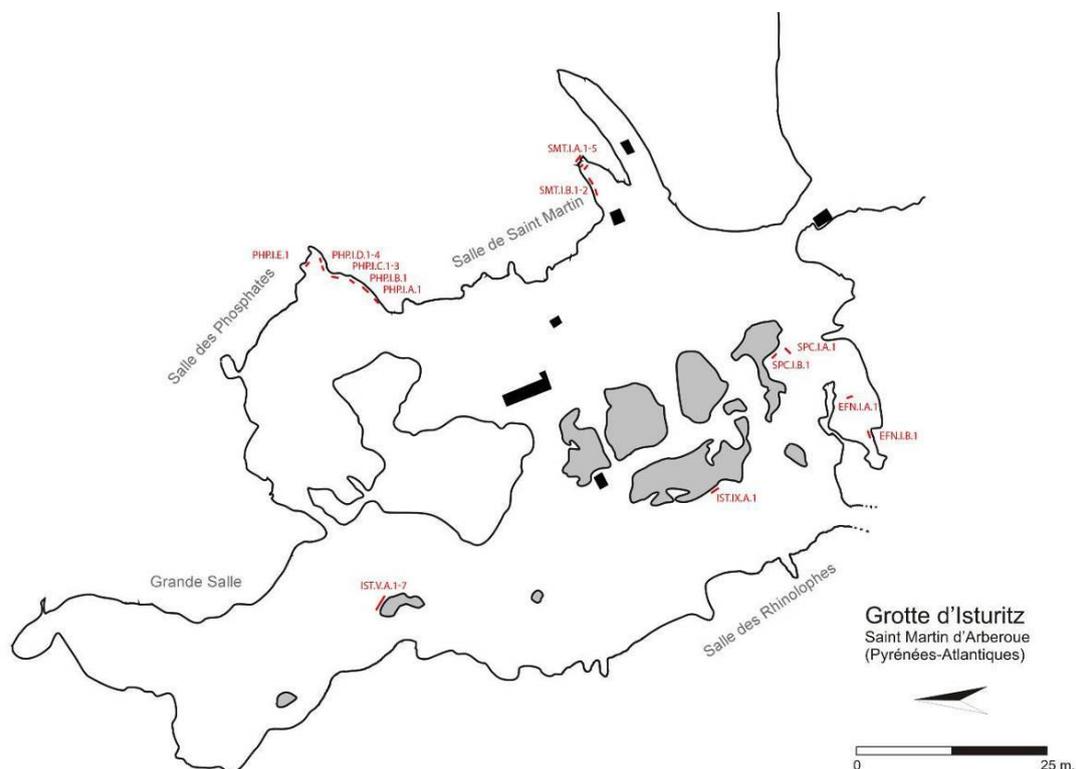


Figure 8. Vertical lines in the Sepulchral hall of the Saint-Martin Hall.

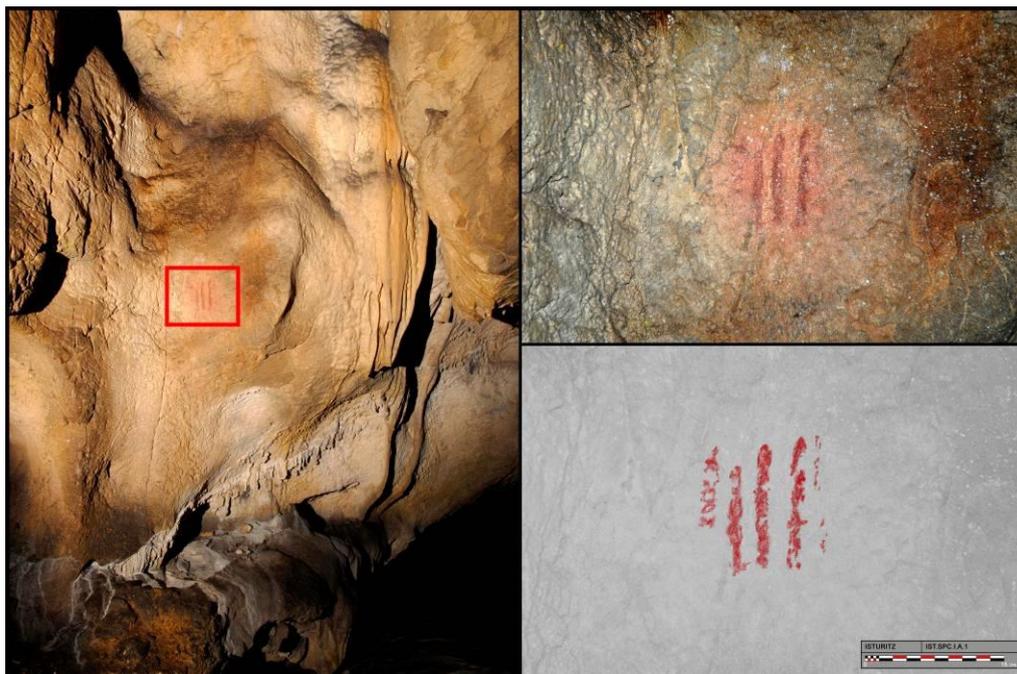
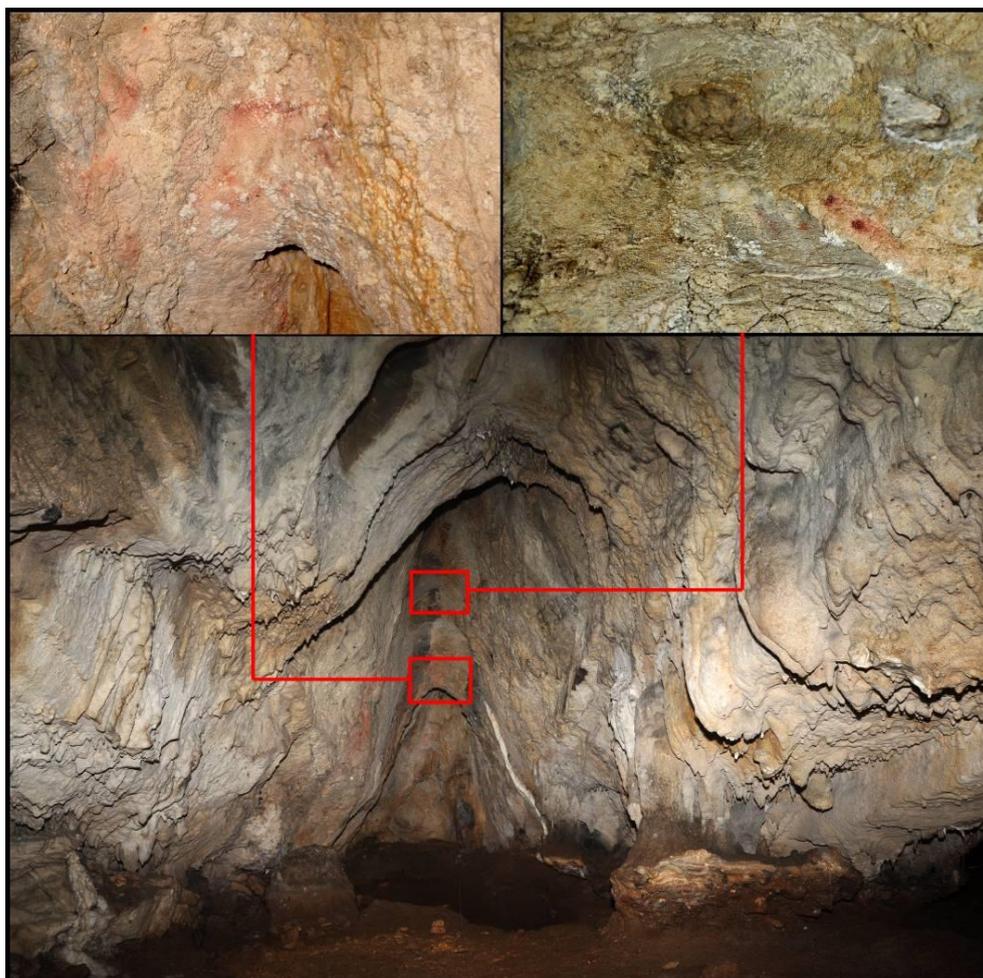


Figure 9. Marks and points in the Large Chamber of the Saint-Martin Hall.

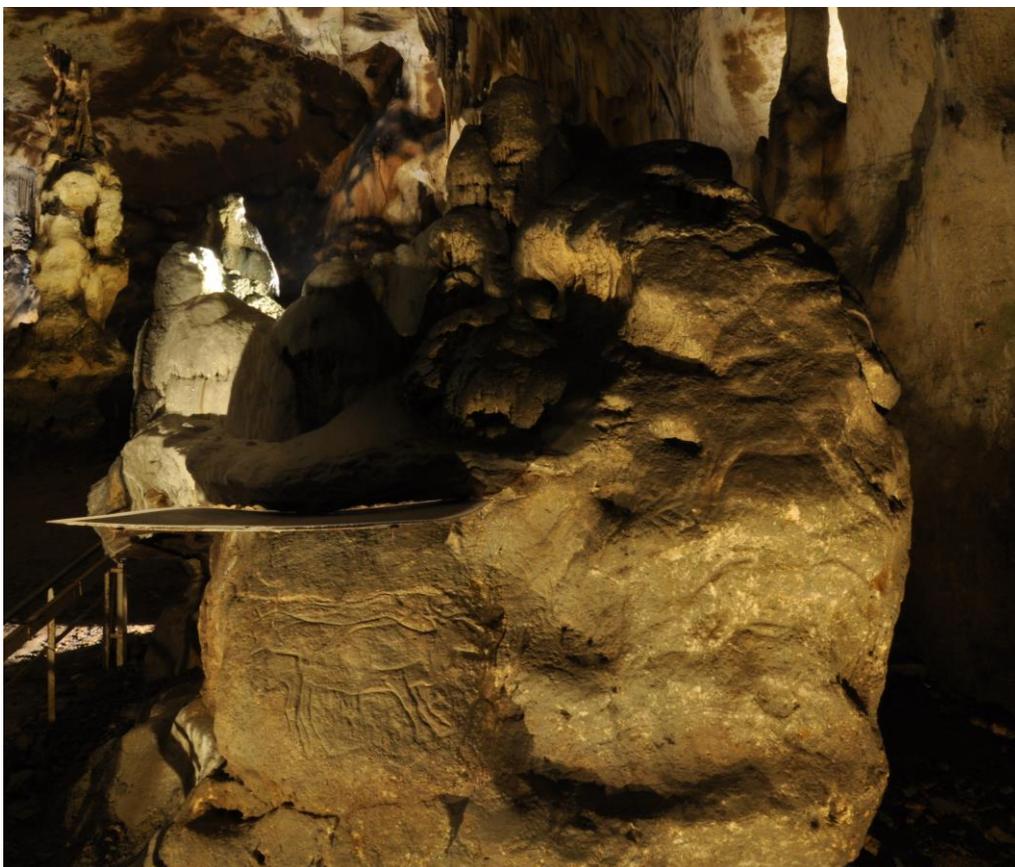


Finally, according to the current study, the graphic repertoire of Isturitz is mainly composed of the set of figures of the Large Pillar, while in the remainder of the cave only more diffuse vestiges are observed: spots, points or lines painted in red. No black figures were identified except a torch trimming of imprecise chronology.

The Large Pillar: The study of the Large Pillar required a specific methodology because direct observation at the time was impossible due to the work on the stairways to descend to Oxocelhaya. As we mentioned earlier, only the analysis of E. Passemard at the time of the discovery of the engravings was done facing the wall.

To overcome this problem, we had to install scaffolding with two heights, which allowed us to observe the reliefs of the Large Pillar up close. The study, which was developed according to the methodology presented above, included the making of photogrammetry surveys for each figure.

Figure 10. View of the Large Pillar from the platform from the other side of the stairways towards Oxocelhaya.



The data which is now available is still preliminary, but it confirms the existence of a much larger number of figures than those which had been listed by I. Barandiarán, closer to the lists of E. Passemard. Nevertheless, the attributions of certain figures by Passemard were not always kept.

As of now, 16 motifs have been inventoried. In this work, we will present the data concerning the left part of the pillar, the one which was best known because it is in the most accessible area. Despite this fact, the current studies revealed certain aspects that have remained unobserved up until now.

Figure 11. Photograph of the main panel in the Large Pillar.



The unit is composed of five figures and several lines with no interpretation for the moment. Based on the direct study of the wall, which included a technical analysis of the motifs, the order of realization of the figures was established.

The first figure represented on the panel is the small deer oriented towards the right located in the central part of the panel. This figure is *infraposed* on the large reindeer, of which the line of the breast and the belly cut the front and back legs (Figure 12: d). The precise identification of the animal remains difficult because of the incompleteness of the head. Some criteria probably allow us to attribute it to the *cervidae*: the hoof and the tail, but the absence of the upper part of the head does not allow us to say whether it is a doe or a fawn.

This figure is one of the most elaborate ones of the panel, despite the fact that the head was not completed; it presents a very careful treatment of the internal volumes, with some details such as the line of the small traits of the belly or the cloven hoof of the back leg.

Subsequently, the small headless deer on the left was made. The line of the back of this figure continues that of the large reindeer, which makes it difficult to determine which of the two figures was made first. Nevertheless, the incurvation which marks the beginning of the line of the hindquarters of the large reindeer is superposed on this small deer, which allowed us to determine that the small deer was made first.

The connection between the lines of the back of these two figures led us to put forward the hypothesis of a possible error in the initial making of the lines of the back of the large reindeer. According to this hypothesis, a first cervical-dorsal line was made for the large reindeer which was too long. To correct this error, the figure of the small deer was "stuck on" to the large reindeer, which was subsequently completed in the correct dimensions. This would explain the excessive horizontality of the line of the back of the small deer, which is not in accordance with the shape of the animal.

This small headless deer does not show the same careful treatment as for the other cervidae of the panel. The tail and the hooves are not shown. The internal volumes are almost unmarked. It is superposed on an undetermined figure, engraved in the left part, formed by three lines which vaguely suggest a bird figure. This figure is incomplete and the lines that shape it do not have the same characteristics as the rest of the figures of the panel, as there are incisions with a very sharp V profile, while the remainder of the motifs were engraved with right angle profile incisions (relief), as we will see below.

The figure of the large reindeer, which occupies almost the entire panel, is probably the most elaborate of the representations of the Large Pillar. It presents a large number of details; neckline, eye, ear, double line of the breast, cloven hooves, muscular insertions of the back legs and knees, and it is the only one that has two legs per pair in this set (Figure 12: c). Nonetheless, certain parts were not completely finished: the lines of the hindquarters and the tail. One possible explanation is the hypothesis that we proposed above concerning the erroneous figuration of the line of the back.

With regard to the snout, it is not conserved because of the removals from the wall, but it is possible that it was also originally represented (Figure 12: a).

Finally, the last figure of the set is a fish which was engraved in the upper part, in the space between the back of the large reindeer and the small headless deer and an unevenness of the wall which marks the natural limit of the panel. This figure does not present superposition with the rest of the motifs of the panel, but its placement in this marginal zone leads us to conclude that it was portrayed after the other figures. The fish is represented by the lines of the contour, the caudal fin, the ventral fin and the lateral line. Its relief is much less pronounced than in the case of the other figures.

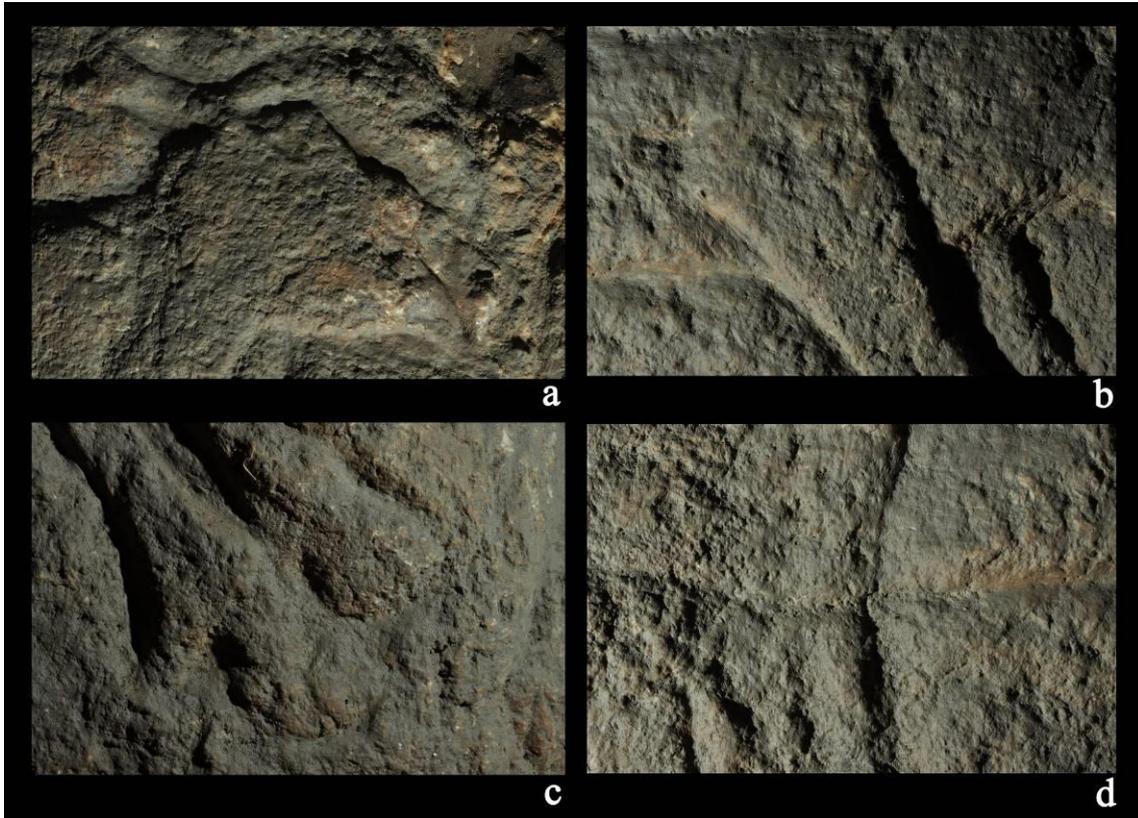
From a technical standpoint, the preliminary data allow us to point out that these figures are part of a common operating scheme, with the exception of the possible bird figure as we mentioned above.

The figures were first formed by picking, which can be observed in the case of the forehead-nasal line of the first deer. After this process, non-symmetrical V profile incisions were made to deepen and standardize the contours. In certain cases, as in the figure of the large reindeer, the exterior edge of the incision was subsequently lowered, which gives the relief effect and creates incisions with right angle profiles.

In the case of the large reindeer, we note the use of differential relief which is visible in the figuration of the legs. The right leg was made first, then there was a lowering of the exterior surface. Subsequently, the line of the breast was portrayed, and the lowering of the exterior part, and finally, the left leg (Figure 12: b). The same approach was used for the back legs. This technique, described by H. Delporte (1988) [1] with regard to the "*woman with the reindeer*" of Laugerie-Basse, was also identified in certain works of portable art of Isturitz, as is the case in the famous feminine representation of "*the amorous pursuit*" (Rivero, *in press*) [18].

At the same time that the contour of the figures was made, the treatment of the internal volumes followed the same approach, first using picking and subsequently abrasion to make the surface polished. The vestiges of the picking intended to lower the surface are particularly evident between the legs of the large reindeer. This approach was used in several parts of the interior of the figures to portray the anatomic modulations, but also outside for the representation of the relief.

Figure 12. Details of the figure of the large reindeer. a) Macro view of the head. The impacts on the level of the snout, which probably destroyed it, are easily visible. b) Differential relief of the front legs of the large reindeer. c) Detail of the cloven hooves of the front legs. d) Superposition of the line from the belly to the back leg of the first deer.



7. The inserted objects:

One of the more specific characteristics of the Isturitz cave is the large quantity of objects inserted in the walls.

In all, 280 deposits were inserted in four distinct halls: the Rhinolophes hall, the Large hall, the Saint Martin hall and the Phosphates hall. In each hall, three zones can be distinguished: a major zone with most of the deposits, a secondary zone where the deposits are still associated although more scattered, and a minor zone in which deposits are isolated and not very numerous or even alone.

There are four types of deposits: flint artifacts, all of which have been knapped, very small fragments of bone, rarely worked and sometimes fractured, coloring materials of different tones and rather rough particle size and, exceptionally, animal teeth.

The containers are of three types: fissures, which contain most of the deposits, then holes and lastly entablatures. The placement in the containers appears to be random and is, based on the current data, rather heterogeneous.

The deposits are often near colorations on the wall, or in the solid color areas. However, none of these deposits has coloration, neither at the base nor at the summit, nor covering them. Sometimes the fissures have traces of color washing, but the deposit remains free of coloration. Such an observation

allows us to consider a deposit after the making of the solid color area, when the coloration was already applied and dry.

Figure 13. Various types of inserted objects in the Isturitz cave: flint, bone, ochre and teeth.



8. Discussion

The relationship between the levels of habitat of the decorated caves, the art and the other parietal evidence remains difficult to establish in most of the cases. In any case, in Isturitz we have one element which helps us to establish relations between the various activities and to establish their chronological order. This is the Large Engraved Pillar which was initially covered by the archeological layers. The reindeer figure was entirely covered by layers F1 and E according to E. Passemard (1944: 77) [15]. He assigns these layers to the upper Magdalenian for the former and Solutrean (base), old and middle Magdalenian (middle and summit) for the latter. The revisions (Petillon, 2004) [16] and dating of the materials (Szmidt *et al.* 2009) [22] suggest a tighter chronological-cultural attribution to the middle Magdalenian for layer E.

With regard to the figurations of the Large Pillar, the data that we presented concerning the formal characteristics and techniques of the representations allow us to correlate the parietal art of the cavity with the mobiliary representations, particularly in the case of the reindeer represented on panels of the levels of the Middle Magdalenian of the Large Hall and the Saint Martin Hall. The analogies in terms of the details represented: double line of the breast, cloven hooves, muscular insertions of the feet, *etc.*, are also found in the techniques used, because relief and differential relief are also used for certain figurations of reindeer on the portable art.

These observations allow us to consider a Middle Magdalenian chronology for the representations of the Large Pillar because, in addition, this type of figuration is absent in the Upper Magdalenian or pre-Magdalenian art of the site.

9. Conclusions

Although the cave art of Isturitz has been known for a century, the recent studies still in progress have allowed us to specify its inventory and its graphic characteristics, which were very vague up until now.

As has been suggested, the parietal art of the cave is part of a wide cultural ensemble that can be attributed to the middle Magdalenian, with characteristics that are broadly shared by the Cantabrian, Pyrenees, and Perigord sites (Fritz *et al.* 2007; Garate, 2009; Rivero, *in press*) [2,3,18]. But for the Engraved Pillar, the technique used and the location in the cave (probably in the half-light zone) is closer to the Charente and Dordogne sites (Roc-aux-Sorciers for example) than to those of the Pyrenees. This divergence offers a greater diversity to the artistic activity of this period.

Acknowledgements

The authors would like to thank Joëlle Darricau, owner of the Isturitz cave, for her warm welcome; SRA Aquitaine which supported this project; the Espace Culturel Isturitz-Oxocelhaya and the Association Gaztelu for their support.

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