

HABITATION STRUCTURES AND BURIALS IN THE ARCHAIC  
AURIGNACIAN AT CUEVA MORIN (SANTANDER, SPAIN)

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Cueva Morin (also known as the Cueva del Rey) is located in the province of Santander, on the northern coast of Spain, just some 17 km south of the provincial capital. Known as an important prehistoric site since 1910, it was excavated between 1918 and 1920 by the Conde de la Vega del Sella and J. Carballo; results of their independent investigations were published by the Conde in 1921 and Carballo in 1923. After a short preliminary field season in 1966, under the direction of Dr. s. J. Gonzalez Echegaray and M.A. Garcia Guinea of the Prehistoric Museum of Santander, a major program of renewed fieldwork was undertaken at the site, directed jointly by Gonzalez Echegaray and the author. Results of the renewed excavations in 1968 and 1969 have been thoroughly published in monographic form (J. Gonzalez Echegaray, L.G. Freeman and al., 1971, 1973; J. Gonzalez Echegaray and L.G. Freeman, 1978a) and in several articles treating particular aspects of the discoveries in detail (L.G. Freeman and J. Gonzalez Echegaray, 1970a, 1970b, 1978b; J. Gonzalez Echegaray and L.G. Freeman, 1972; L.G. Freeman, 1976, 1978a, 1978b). The 1968-1969 Morin investigations were financially supported by the U.S. National Science Foundation, the Patronato de las Cuevas Prehistoricas de Santander, the Wennergren Foundation for Anthropological Research, and the Smithsonian Institution, and assistance in the form of air transport for a palaeolithic burial was afforded by the U.S. Air Force. We are grateful to all these agencies for their help. Work was undertaken by an international team of prehistorians and collaborating scientists including K.W. Butzer (geomorphology), J.M. Apellaniz (post-Palaeolithic archeology), Arl. Leroi-Gourhan (palynology), J. Altuna (palaeontology) and B. Mada-riaga (malacology) and during the early part of the 1968 season, we were fortunate enough to have the cooperation of a Belgian team of excavators under the leadership of Dr. Paul Janssens. Only the outstanding effort of all these associates made research at Morin so successful. This paper digests and supplements the published results of that collaborative effort.

The Morin stratigraphic sequence, which complements other long and relatively complete Upper Pleistocene sequences such as those from el Pendo (J. Gonzalez Echegaray et al. i.p.) or Castillo (V. Cabrera, 1978) in Cantabrian Spain, starts with nine Mousterian horizons, beginning and ending with Denticulate Mousterian occupations with bracket 5 levels attributable to the Typical Mousterian (sometimes with the regionally distinctive "hachereau sur éclat" or cleaver flake.

One typical Mousterian horizon contained structural remnants reported elsewhere (Freeman, 1976). The first Upper Palaeolithic horizon, level 10, was the first certain Chatelperronian occupation discovered in intact stratigraphic context in the Iberian Peninsula. There follow three levels of "Archaic Aurignacian" (including level 8a, the subject of this communication), two of classical Aurignacian (comparable to French "Aurignacian I") and one of evolved Aurignacian. There are two Gravettian levels (4 and Lower 5), and one each of Upper Solutrean, Upper Magdalenian and Azilian, the last capped by a flowstone which has been dated at 9000 years B.P.  $\pm$  150 (I-5150).

For level 8a, there are two consistent radiocarbon dates (SI-952 = 26,485 B.C.  $\pm$  556; SI-956 = 26,565 B.C.  $\pm$  1324); these however are younger than expectable, and younger than dates on overlying levels 7 and 6. We believe that the Morin Archaic Aurignacian should date closer to 30,000 B.C. than to 26,500.

While level 8a accumulated, contemporary climate was temperate, and the environment around Cueva Morin was covered with dense mixed forest (with pines in the uplands, and oak, ash and hazel in the lowerlying areas). Red deer, roe deer, and wild boar were abundant in the immediate vicinity while large bovines and horses were hunted in the clearer coastal area and chamois and ibex taken in the mountains not far away. The Morin Aurignacians also made at least sporadic use of coastal molluscan resources, especially those from the littoral and intertidal zones, such as limpets (*Patella*), winkles (*Littorina*), oysters (*Crassostrea*) and clams (*Solen*), available as close as the ria Solia, less than a kilometer away.

The stone tool assemblage from level 8a including the structures totalled 1018 retouched tools: 465 of these were recovered from a part of the deposit which is somewhat more recent than the structural complex and are excluded from the present discussion, 368 were found in the fill of the large semisubterranean structure to be described below and the rest came from deposits contemporaneous with this structure fill and the burials (fig.1). Each of these lots has broadly similar characteristics: the Aurignacian index is considerably greater than the Perigordian (GA usually from 14 to 20; GP 0.9-1.7), there are at least twice as many endscrapers (mostly steep "Aurignacian" types) as burins and very few burins on retouched truncation. Lamelles Dufour are present to very abundant (up to 15% of the assemblage) and there are a few Aurignacian blades. These characteristics ally level 8a with the peculiar kind of Aurignacian Pradel has called "Correzian" or "Aurignacian in the broad sense". The bone artifacts series is extremely poor.

The maximum areal extent of the 1968-1969 excavation within the cave was 39 square meters; the exposure of level 8a amounted to some 25 m<sup>2</sup>, including some 5 m<sup>2</sup> in the witness section left against the west cave wall by our predecessors; separated from the witness section by a deep "sondage", some 20 m<sup>2</sup> more of level 8a were preserved in the vestibule of the cave, and it is here that the structural remains were found.

The structural complex in this level (fig.2) consists of: 1) a large dugout hut foundation; 2) an alignment of post-holes; and 3) four graves (tranches containing human remains, covered with earth mounds and associated with a variety of related features), only two of which are well enough preserved to warrant an extended description. The fill in all the dugout structural features (hut foundation, postholes, graves, pits, etc.) consists of dark chocolate brown and red-orange sediments, which contrast in color as well as texture with the yellowish-tan levels these features penetrate; this condition naturally facilitated their recognition and excavation.

The largest structure in level 8a is an artificial rectangular depression with rounded corners and vertical walls which reach 27 cms in height where they are best preserved. The long (NW-SE) axis of the depression is 2,6 meters in length; the greatest width of the intact portion measures some 1,75 meters, but the original width cannot be exactly determined, since the southwest side of the structure was destroyed by the deep test trench of earlier excavators. However, since the structure does not continue beyond the test trench into the west witness section, its maximum width cannot be greater than 3,9 meters, so that we may confidently assume that at least 45% of the original floor area has been recovered intact. The supposition that we actually recovered the greater part of the original structure is strengthened by photographs of the stratigraphy discovered in the deep trench by our predecessors as well as the description of the sediments published by the Conde de la Vega del Sella (1921). The Conde actually noted the color contrast between the structure fill and surrounding levels, which he mistakenly described as a "U" shaped channel fill "in the center of the Cave" (Conde de la Vega del Sella, 1921: 9); photographs and sections (the latter unfortunately not to scale) suggest that the test trench destroyed a strip less than a meter wide along the southwest wall of the dugout. If that conclusion is correct, the structure must have been roughly square, and some 2/3 of its floor surface were recovered intact in our excavations. We think the structure was enclosed with a superstructure of walls and a roof. There is absolutely no evidence concerning the possible nature of the aboveground fabric of this features since there were no vestiges of posts or any other remains which might be related to roof supports. Nevertheless, it is obvious that without some sort of superstructure barring free movement across its borders the dugout walls would soon have been trampled down and the walls would not still have been preserved as abrupt vertical edges in the stratigraphy. In

fact, the middle of the southeast wall has evidently been trampled. Instead of a vertical wall, that area presents a short hard packed, sloping transition from the inside of the structure to the exterior. An entrance was probably located there.

The presence of standing vertical walls indicated by these remains almost inevitably implies a roof of some kind. Judging from the lack of buttresses or posts which would be needed to take the vertical and lateral pressure of a heavy substantial superstructure, it is clear that the walls and roof of this feature must have been very light. Suitable materials would need high tensile strength; skins, or fabrics of woven animal or vegetable stuff would satisfy this condition. The dugout is entirely within the cave, in an area where microclimate is so humid that condensation and downfiltering ground water drip constantly from the low ceiling. When more than two or three people are together in the cave, the drip from condensation reaches annoying proportions, and it may be for that reason that the structure was built. (Climate during the occupation of level 8a was quite similar to that at present). The covering of a hut in such surroundings must be sufficiently permeable to permit air circulation, or its interior will be intolerably humid and the covering will soon rot. The roof must have been low, since the cave ceiling is at most 3 meters from the contemporary surface in that area. There is no direct evidence for roof supports, but there are nevertheless various possibilities: 1) a central post, not sunk into the floor, might have left no recoverable traces, though this is unlikely; 2) one or more posts might have been emplaced in the area destroyed by earlier excavators; or 3) the walls and ceiling might have been held up by guylines anchored outside the excavated area, perhaps to the ceiling or walls of the cave itself.

There were two noteworthy features inside the structure: a hearth against the SE wall and low earthen bank against the opposite wall, nearest the cave mouth. The hearth itself is a shallow, more or less circular depression in the floor, filled with charcoal, calcined bones, and burn stone. From the basin, a shallow draught trench slopes upward to the exterior through the structure wall. Remains of slightly charred "foodbone" in and near the fire place suggest that it was used for cooking, and the abundance of stone-chipping debris nearby suggests that toolmaking and resharpening were often done in the fire-light.

Running along the whole of the NW wall was a flat platform of packed earth some 12.5 cms high and 50 cms wide. This bank, built after the wall was dug, probably served as a sort of bench, and perhaps also as a sleeping surface.

The nature of its internal features and the sorts of debris found on its floor suggest that the dugout structure is a hut foundation, where routine activities of daily life were carried out. No currently available dating technique is sensitive enough to indicate how long the hut stayed in use, nor is there evidence in the biotic remains for seasonality. However, other kinds of information throw some light on these questions.

The fill of the hut is an accumulation of debris which built up gradually with time. This debris is composed of patches of fine, almost paper-thin horizontal laminae of trodden earth, like "puff-pastry" in morphology, which are layered one stop the other from bottom to top of the fill. At first we did not know what caused these striking layers. However, when in our second season's fieldwork we began to excavate areas our crew had used as paths to the work area, we discovered that during the 1968 field season, we ourselves had deposited 5 cms of this puff-pastry stop the surface we cleaned when work was begun. Their explanation is quite simple. During frequent rainy work-days, the excavators unknowingly brought wet earth into the cave on their shoes. This soil came off as they moved about and was trampled thin. When weather cleared these layers dried, and they were then in turn covered by new layers of the same kind on the next rainy day. If our field crew of a dozen people, occupying the cave during our two month field season, could originate this quantity of sediment in heavily travelled areas, the formation of 27 cms of prehistoric "puff-pastry" in the hut foundation would not have required any great length of time. An intensive but relatively short occupation, on the order of no more than 5 to 10 years, as a conservative estimate, is all that would be needed.

Evidence concerning seasonality of occupation is only indirect. As mentioned above, the NW hut wall, closest to the cave entrance and thus most exposed to the elements, was permanently closed, while the opposite wall, next to the hearth, could evidently be opened or shut as desired. In summer, air currents flow from the interior of the cave along the ground to the entrance. This steady draught is strong enough to blow smoke, ash and live cinders from an open hearth and would have made the hut interior uninhabitable, besides threatening to burn down the superstructure. The draught could be lessened then by shutting the SE hut wall, restricting the access of air needed for combustion to the small draught trench. On the other hand, in winter, air circulation in the cave is reversed: it flows into the cave along the ground, returning to the outside along the ceiling. Then, the draught trench would not have provided sufficient oxygen to maintain combustion, but that could be remedied by keeping the interior hut wall open. Because of the prevailing direction of ventilation in winter, there would not have been the same danger

from gusts of air as in summer. Our limited experiments suggest that these clever manipulations, which might at first seem to require of our Aurignacians a more sophisticated understanding of the principles of physics than one normally associates with Palaeolithic cave dwellers, would almost inevitably occur to anyone sitting around a fire in a cave in Northern latitudes. If our reconstruction is correct, and it corresponds with the evidence better than the alternatives, the hut in Cueva Morin was most likely occupied in both winter and summer, and is probably a "permanent" habitation, used all year round, rather than a seasonal camp.

We are quite aware of the many uncertainties and possible pitfalls of attempts to estimate prehistoric population size. However, calculations of the sort published by S. Cook and R. Heizer (1968), based on data from aboriginal California, are at least suggestive: they arrive at an average ratio of floor space in dwellings to residents of 20 sq. ft. per person (for smaller groups). Assuming the Aurignacian structure to be square, and 72.76 square feet in area, this relationship predicts 3.6 (let us say 4) people as the number of residents. Incidentally, this figure is not greatly different from those one might derive from an intelligent evaluation of the meat-weight estimates for this level published elsewhere (L. Freeman, 1973: 27). Whether the figure is correct or not, the true number must indeed have been very small, probably of that order of magnitude, and almost certainly no greater than 10. Any group larger and with an internal organization more complicated than a single nuclear family seems quite out of the question for such data. Obviously, a coresident unit this small must have maintained at least periodic relationships with several other social units in the area; the nature, organization and complexity of those units and relationships is of course not suggested by the Morin data.

Outside the hut wall, in a line which roughly follows the direction of the SE, ending about 1.5 meters from the hut corner, we found a series of dark discolorations, measuring from 20 to 40 cms in major diameter. These, when excavated, proved to be the molds left by decayed wooden posts. At first, five posts were emplaced in a sinuous line which was straightened by removing two of them and replacing them by a single post. Details of the construction of the postholes are themselves interesting. Starting at the hut corner, the first two emplacements are compound ones: as a first step a single hole, about 25 cms deep and somewhat larger than needed to accommodate a pair of posts, was dug; next, two posts were set in the hole and the space between and around them was filled with rammed earth. There is not apparent explanation for this construction technique other than that it was probably at least as easy to dig one larger hole with the simple implements available than it would have been to dig two smaller ones side by side. However, an individual hole was dug for the last post in the line. The posts apparently decayed in

place, leaving cylinders of blackish earth, vitually free of cultural material, to mark their former outlines within the somewhat lighter posthole fill. The diameters of the cylindrical stains, which vary from 12 to 19 cms, probably correspond closely to the diameters of the original wooden posts. Since these posts divide the hut and the area immediately to its SE from the mortuary precinct, it seems possible that they may have supported a screen of skins or plant material which has since disappeared, but that would have made the separation of the two zones more complete.

Outside the hut, separated from the burial precinct to be discussed below, the inhabitants of level 8a did the greater part of the tasks related to stone tool fabrication and repair, and possibly carried out some of the stages of butchering food animals. The regular performance of such routine activities is not attested by the debris on the other side of the posthole alignment, where some finished tools of particular types were recovered, but almost no chipping debris or animal bone was found.

In the burial area, remains of four graves (which bear no systematic orientation to one another) were discovered. Two of these (Morin IV and III) were largely destroyed by the Aurignacian cave residents themselves, in the course of digging two more graves. However, the hips and upper legs of Morin III, a robust adult, were preserved in the bottom of the grave containing Morin I, and from their position Morin III seems to have been buried in an extended supine position. At least one leg was amputated at about mid-calf, and the stump was burned, apparently as a part of the burial rite itself. The other two graves are quite well preserved, although mounds stop each were partly destroyed by excavators in the early part of the century.

The best preserved burial is that called Morin I. This individual was buried lying on its left side, legs slightly flexed, arms bent to bring the hands up in front of the neck. The body was decapitated, and the head lay separated from the neck, at a slightly lower level than the rest of the body. Apparently, both legs were amputated near the ankles, and the stumps may have been charred as they were in the case of Morin III. Two cutting instruments were found in intimate contact with the body: both are flake-blades with shallow retouch either opposed or adjacent to fresh cutting edges. One, in flint, was found under the midsection, next to what we presume to be the remains of the feet. The other, a quartzite piece, was found under the neck. These may be abandoned instruments with which the ritual mutilations were performed.

Description of the human remains is complicated by the fact that Morin I and III are not skeletons, as is commonly the case for Palaeolithic human remains, but unique three-

dimensional pseudomorphs or "soil-shadows" resulting from a process of arrested decay and partial replacement of soft parts by fine sediments. They are exactly analogous to the completely mineralized animal and plant "fossils" familiar from geology and palaeontology, except that in our case the "petrifikation" process is not complete; the Morin pseudomorphs differ somewhat in color and considerably in texture and solidity from the surrounding matrix but they still consist of relatively friable, compact but not indurated silty sediments. All that remained of the bones were occasional concentrations of decay products, in sufficient quantity to fluoresce strongly under ultra-violet light. In the case of Morin I, however, stature can be grossly estimated from the topography of the pseudomorph, and it seems that this was a robust individual, probably male, whose height as calculated by Smithsonian anthropologists L. Angel and T. Dale Stewart, reached between 185 and 195 cm. Similarly tall individuals are of course known from other European Earlier Upper Palaeolithic localities: the old man from Cro-Magnon (180 cms +), a skeleton from the Frotte des Enfants, Grimaldi (186.6-189.6 cms) and the taller individual from Barma Grande (189-189.1 cms) are examples (L. Wells 1970: 462).

The Morin I "soil shadow" was accompanied by the pseudomorphs of grave offerings, including that of a small ungulate, apparently trussed and placed whole in the grave above the neck and shoulders of the human body. Other offerings included what seems to be a slab of animal ribs, laid over the foot of the burial. Conditions in the Morin II grave did not, unfortunately, lead to this unusual state of preservation of burial contents. A black, buttery, rank-smelling sediment was all that remained, other than the earth that filled the trench.

The trench containing the remains of Morin II was 168 cms long and 47 cms in maximum width; its NW end is the narrower, and it gradually widens to the other end. Perhaps because digging in these sediments must have been laborious, the walls of the trench were built up above the surrounding ground level by the addition of clods of clay. On the South side of the grave, some 38 cms from its narrower end, there was a shallow (6 cms) circular (17 cms diameter) pit, filled with burnt bone, charred earth and charcoal, and bits of ochre. A narrow tube led from this pit to the interior of the grave. The Morin I trench was much larger: 210 cms in length and 52 cms wide at its widest point. As was the case for Morin II, the walls of this trench were partly raised and reinforced with lumps of clay, and there was likewise a (larger) pit near the foot of the trench, with identical contents, which also communicated with the interior of the burial by means of a small channel through the trench wall.

At top both burial trenches, the Aurignacian cave-dwellers built low mounds, using earth dug from occupation layers in other parts of the cave as construction material.



Stone tools from both Mousterian and Aurignacian occupations were recovered from the fill, in clods of different colors. Clods and loose earth were simply heaped up asystematically with occasional scatterings of powdered red ochre to form the mounds. Although they were partly destroyed, close estimates of the original dimensions of the mounds are possible. That atop Morin I was at least 225 cms long, 75 cms wide and 44 cms high, while that above Morin II was ca. 40 cms high, 55 cms wide at least, and probably about 187 cms long. The Morin II mound was less well preserved than the other. Within the upper part of the mound atop Morin I, over the midsection of the body, we found two superimposed hearths, full of the same sort of debris as was recovered from the two small pits beside the graves. We believe that these hearths were used to prepare offerings for the dead which were then placed within the pits so that their essence would be transferred to the graves' interiors. The fact that two hearths were found atop Morin I suggests that this process was performed not just once but on periodic occasions, and the fact that they are incorporated in the mound fill indicates that the burial process was not completed until after the last of these ceremonial fires was built.

Direct evidence of the kinds of digging implements used by the Morin Aurignacians was preserved in three places in the structure complex: in the bottoms of the graves of Morin I and Morin II and in the posthole alignment. In all three, the evidence consists of sets of shallow (0.1 to 1.0 cms deep) arcuate grooves produced by the point of a digging implement. An analysis of the size, shape, trajectory, inclination and relationship of these grooves shows that the tool used was in every case an implement with a single, relatively sharp, more or less conical point - in the other words a "digging-stick" - whose shaft was probably not wider than 2 to 2.5 cms. The grooves left in the posthole alignment have one "wall" (that produced by the tip of the instrument) almost vertical, the other "wall" inclined at an angle of at least 75° to the first, and are wider at the higher part of their curved trajectory. The implement must in this case have been held with point inclined downward, and its point travelled upward, during use. From the shape and inclination of the curved grooves, we may suppose that the operator knelt or crouched near the edge of the posthole as he worked, with the digging stick inclined close to the ground, scooping earth out of one posthole to the ground surface. If the hand used to provide driving force was held high up the shaft of the digging stick, their curvature shows that the grooves were produced by a right-handed person. The discovery of marks of a Paleolithic digging implement has no parallel of which we are aware in Paleolithic studies.

### Concluding observations

Unusually good conditions of preservation combined with appropriate recovery techniques to make Cueva Morin an especially illuminating site, one which provides an exceptional density of information about the lifeways of its occupants at several periods, and that is particularly true for this Archaic Aurignacian level. Level 8a yielded information not only about the technology and economy of its residents, in the form of digging-stick marks, butchering and stoneknapping residues, and tools of all kinds, and the spatial organization of daily activities, reflected in the presence of structures and differential distributions of items on the living surface; it also provided rich material bearing on social organization (from hut size and interior arrangements, burials and further analyses of spatial differentiation of activities). Some idea of the importance of the implications of information from Morin level 8a for the objective study of the belief systems of prehistoric peoples, a subject which, if dealt with at all by prehistorians, is usually handled by direct ethnographic analogy or outright baseless speculation can be given here.

Despite the apparent variety of attitudes towards the dead displayed by living peoples, all can be subsumed into one or the other of two opposed orientations. Death either entails the relatively complete severance of the deceased from the social system of the living or (more commonly) it involves a change of status of the deceased within the ongoing social system, in which case dead and living are bound together in regular relationships, each group having its distinctive sets of rights and obligations respecting the other, in a larger society that transcends death's frontiers. For the inhabitants of Cueva Morin, there would have been numerous alternative ways of disposing of the dead either in or outside of the cave. The fact that the deceased were kept in such close proximity to the quarters used by the living strongly suggests that they were regarded as continuing members of the society, but the presence of a screen wall separating the mortuary precinct from the living area and the evidence that activities undertaken by the living in the mortuary area were highly specialized certainly indicates that the status of the dead and that of the living were well-differentiated. Furthermore, it was not the dead individual in his living physical form who persisted with new sets of rights and responsibilities in the social system. The dead were, it is true, at first held in awe or even feared, and their physical aspect was changed by mutilation, perhaps because the transition from "living" to "dead" status was not automatically complete to the satisfaction of all concerned until the appropriate rites marking and facilitating the change had been performed. But once the ritual fires were finally extinguished and the last offerings were made to the dead, the body itself lost its numinous quality and could be destroyed with impunity in the course of

later interments. What continued to dwell in reverence in the burial precinct, then, was not the body or even necessarily the individual, but a sort of supernatural aspect or "soul", which continued relationships with the rest of the community on a spiritual plane. The sacred character of the burial precinct continued to be respected by Archaic Aurignacian inhabitants of Morin long after the hut and posts fell into ruin; the mounds atop Morin I and II were not destroyed by these later cave-occupants even though they were obvious obstacles to free movement across the burial precinct. There is no doubt that the beliefs and practises reflected in these remains are religious in nature in the fullest sense of the term.

Such finds as these tell us a great deal about the Aurignacian world in the Cantabrian region, but they have evident implications, surprising in their antiquity, which go well beyond that relatively limited realm.

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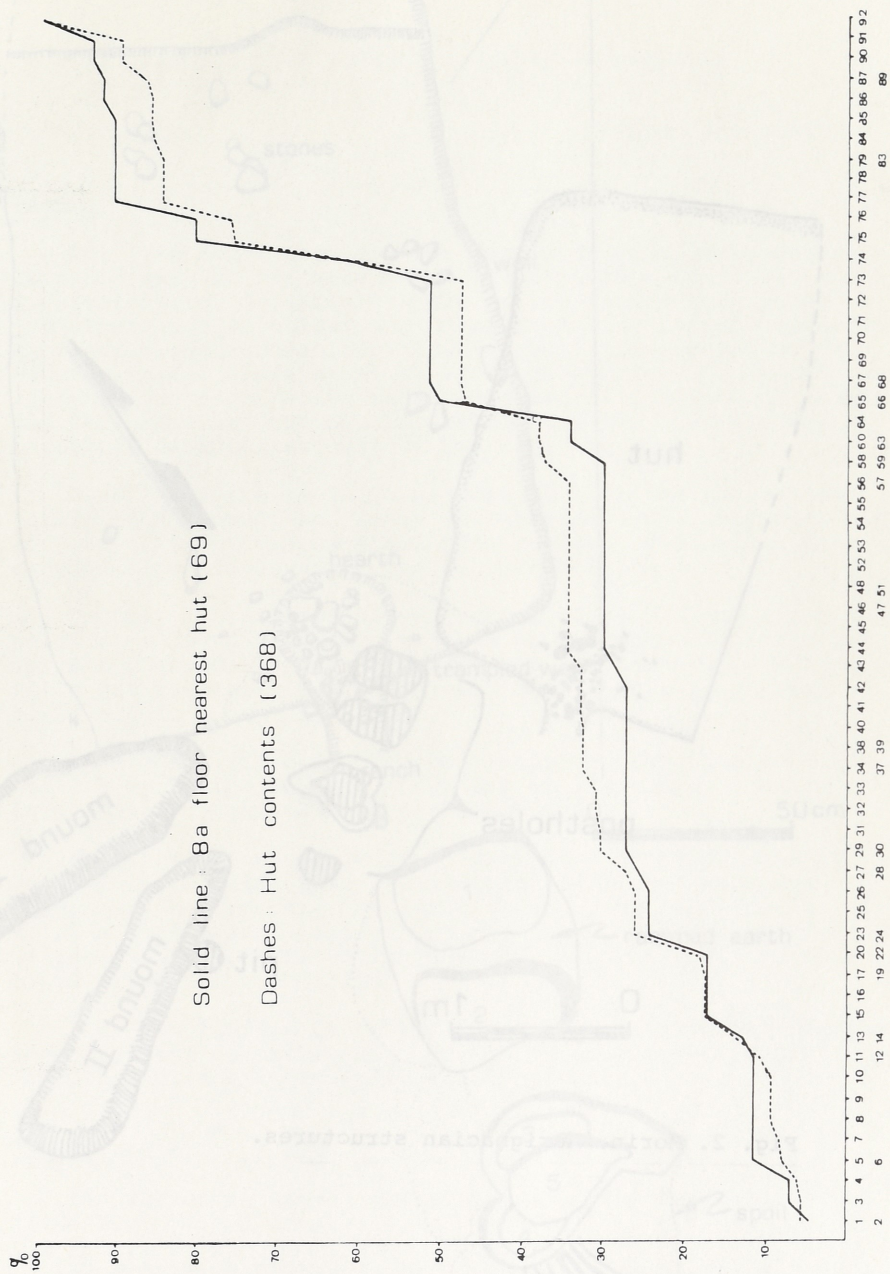


Fig. 1.

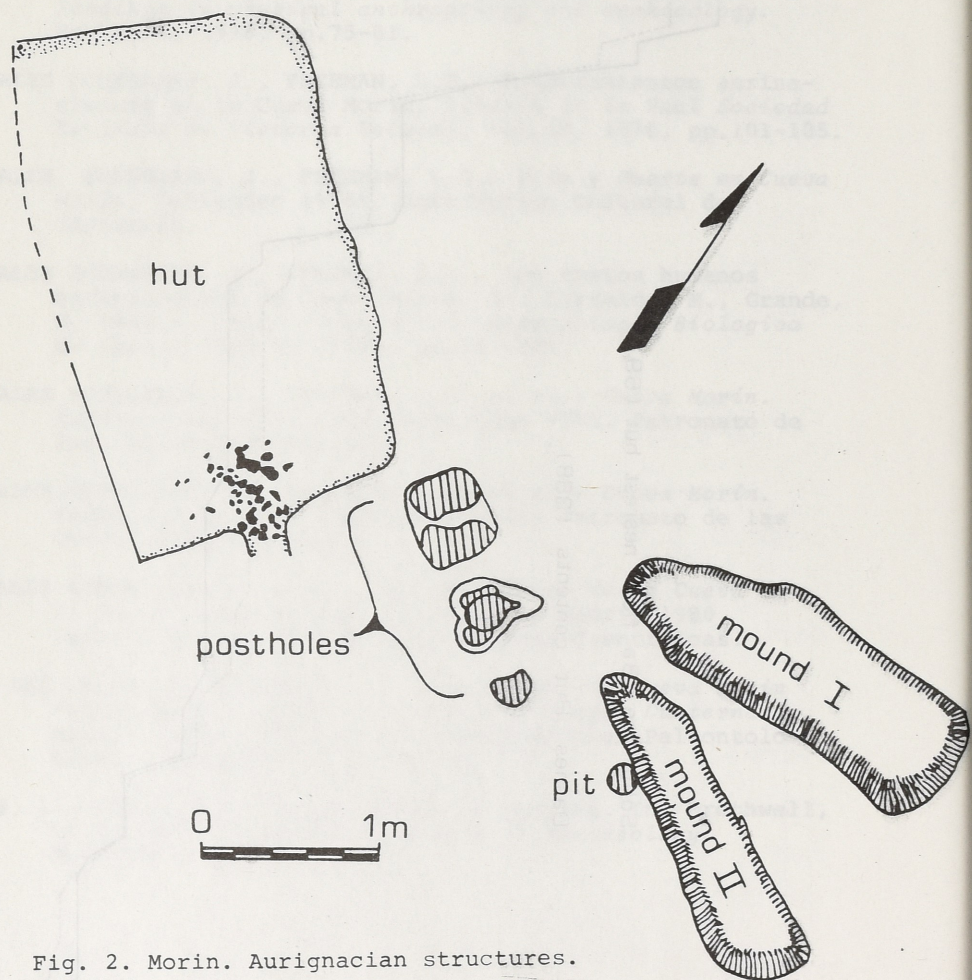


Fig. 2. Morin. Aurignacian structures.

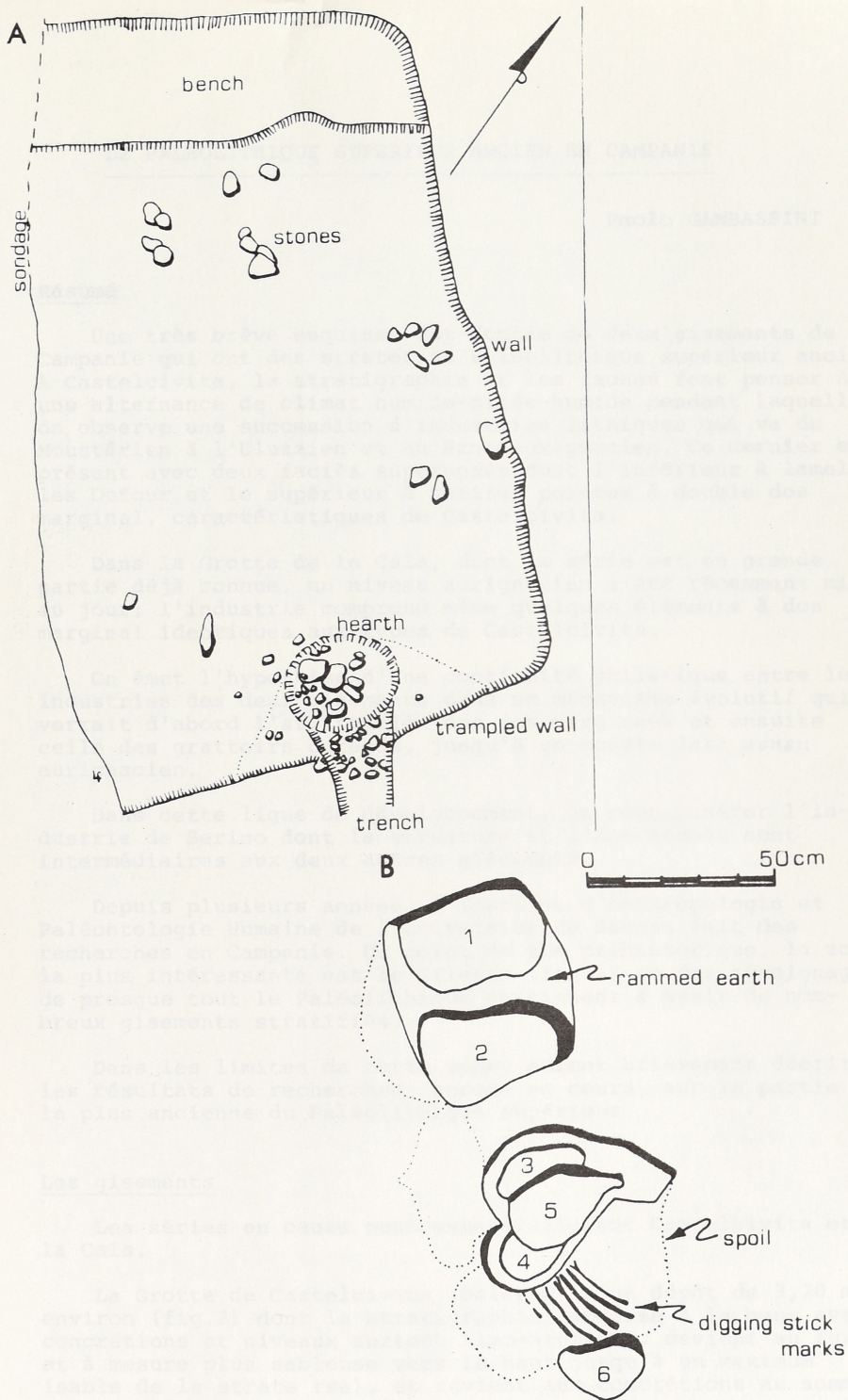


Fig. 3. Morin. A: detail, hut floor; B: detail, postholes.