Es de notar también que en estos niveles las aves presentes no eran solamente los habituales comensales del hombre (Pyrrhocorax, Turdus y Passeriformes) sino que se encuentran presentes varias anádidas (Anas, Tadorna) y otras cazadas probablemente por los moradores del yacimiento.

Desde el punto de vista de la industria lítica, los niveles V a III son Azilienses y en ellos se aprecia un progresivo enriquecimiento en puntas y laminillas de dorso y en laminillas de dorso y truncadura. En el nivel II, aún Aziliense, pero con influencias Sauveterroides, aumenta la variedad de las puntas de dorso progresivo y en laminillas de dorso y truncadura. En el denominadas mesolíticas y se suman algunos triángulos, la variedad de las puntas de dorso aumenta notoriamente, aumenta la variedad de las puntas de dorso denominadas mesolíticas y se suman algunos triángulos, a la vez que aparece la técnica del microburil.

La industria ósea de los niveles V a III muestra en resumen, e independientemente de los contados restos pertenecientes a las primeras fases del Paleolítico Superior, que muestran visitas muy esporádicas a la cueva durante esas épocas, Ekain, con un magnífico santuario de arte rupestre en su interior, es un yacimiento estacional, pero ocupado intensamente desde el Magdaleniense Inferior hasta el Aziliense más tardío, por grupos humanos procedentes de otro yacimiento base. Entre los existentes en las proximidades es Urtiaga el que ofrece más probabilidades de serlo.

**SUMMARY AND CONCLUSIONS**

Ekain cave is best known for the important rupes- tral art sanctuary located in its interior (see Altuna — Apellániz, 1978). However there is also an archaeological site located in the cave’s entrance and in a small lateral gallery (2 x 13 m in size), excavated between 1969 and 1975.

Ekain is situated at the confluence of two valleys bounded by steep rocky biotops. It is 1,5 km from the confluence of the resultant valley and that of the Urola River, about 8 km upstream of the present coast of the Bay of Biscay, and whose surrounding topography is dominated by low hills. With in a two-hour walk of Ekain is the prehistoric site of Urtiaga and within three hours, that of Erralla. Both of these sites contain Magdalenian levels contemporary with those of Ekain.

The Ekain stratigraphy, 5 m in thickness, includes 12 levels which are summarized below. The basal levels XII and XI, which average 90 cm in combined thickness, are totally sterile, both archaeologically and paleontologically.

Level X, with an average thickness of 80 cm, is a stratum very rich in remains of cave bear (Ursus spelaeus). Evidence of the presence of humans is minimal: only a few possible Chatelperronian artifacts.

Level IX, with an average thickness of 90 cm also contains abundant remains of Ursus spelaeus, but only a few scantly artifacts of possibly Aurignacian type. The base of Level IX has been radiocarbon dated to 30,600 B. P. The lithic tools found in these deposits were made elsewhere, suggesting that the cave was only sporadically visited by people who did not habitually live there. Along with the cave bear remains, there are some other Ungulate remains, principally of chamoins (Rupicapra rupicapra) and red deer (Cervus elaphus). Their presence poses the problem as to whether they had been the prey of the bears, the humans, or both. In order to try to answer this questions, the body parts of the Ungulates in the basal levels are compared with those found in levels with of intensive human occupation and scarce presence of Carnivores. It appears that Carnivores transported the Ungulate bones in Level Xb, but humans seem to also have intervened in bone transport in levels Xa and IX. The cave bear remains have also been the object of a detailed paleontological study.

Level VIII, deposited probably during the Würm III/IV interstadial, contains no cave bear remains. The industry is banal and there are only a few faunal remains, mostly of chamois. The presence of boar (Sus scrofa) and an increase in roe deer (Capreolus capreolus) indicate a relatively temperate climate during the formation of this deposit, radiocarbon dated to 20,900 ± 450 B. P. Manifestly the cave was used but only slightly by humans in this period, which could correspond to the Solutrean.

It is Level VII (Lower Cantabrian Magdalenian) which has the first evidence of intensive human occupation of Ekain cave. The base of this level was deposited under temperate, humid climatic conditions, probably correspondig to the end of the Lascaux Interstadial. There is a further evidence of two brief cold episodes interrupted by another temperate phase in the basal part of this deposit. However the rest of the level was laid down under cold, humid conditions which could correspond Dryas I. The radiocarbon dates obtained so far the period from 16,500 to 15,400 B. P.

The Level VII bone industry clearly displays the characteristics of the Lower Cantabrian Magdalenian, notably a quadrangular cross-section point with a split base, a bi-points piece, a plano-convex cross-
section wand and a point with a deep longitudinal groove. The presence of antler splinters (blanks) indicates the in situ manufacture of certain pieces. It is worthy of note that the osseous tools are well made and are mostly pints; ich could suggest that they were principally used for hunting.

The lithic industry of Level VII also seems to be specialized. Processing tools (e.g. endscrapers, burins, sidescrapers etc.) are scarce but there are many microlithic backed, bladelets, probably used in composite hunting and/or fishing weapons. This specialization could also indicate a seasonal use of the cave, although, since debitage remains are abundant, occupation were long enough to have included considerable flint-working. Some decortication flakes and core rejuvenation flakes could be refitted, along with burins and burins spalls, confirming the hypothesis of in situ flint knapping.

The ungulate remains clearly indicate seasonality. Red deer was the principal base of subsistence in Level VII times. The analysis of the age at the time of death of the faws and other young Ungulates shows that of 22 animals whose age could be specified in months, 18 were killed in their first month of life (around the month of June) and the other four were also killed in summer or autumn. None were killed in winter. In addition, the body part analysis shows that whole carcases were often brought to the cave. This is understandable since so many of the prey were fawns killed in their first month.

It is possible that the seasonal hunters of Ekain came there from Urtiaga, a cave with an important Lower Magdalenian level (F), located only slightly more than a two-hour walk (8 km) from Ekain. The flint at Urtiaga is the same as that of Ekain and there are similarities between the bone industries of Ekain Level VII and Urtiaga Level F, which is radiocarbon dated to 17,050 ± 140 B.P. There are also similarities between the faunal spectra of these two levels, the difference being that Urtiaga has young red deer hunted throughout all seasons of the year. Finally the Ekain deposit contains some red Triassic sandstones whose closest source is 20 km from the cave, a fact which clearly points to the mobility of the human groups which used the cave in this period.

Level VI pertains to the Upper-Final Magdalenian. The lower half (VIb) was deposited under very cold, according to both palynological and sedimentological analysis. This period would appear to coincide with Dryas II, with a radiocarbon date of 12,050 ± 190 B.P. The arboresal pollen curve descends considerably; deciduous species are virtually absent and the Ericaceae are at their lowest point in the whole pollen sequence studied at Ekain (Levels VII to II). These environmental conditions may have caused a decrease in the regional red deer population, the possible reason for which the cave inhabitants substituted ibex (Capra pyrenaica) hunting for reed deer hunting and changed their hunting territories to the rocky slopes of the Erlo-Agido mountain massif from the coastal hills preferentially exploited in earlier times. Following this cold period, a climatic amelioration (probably Allerod) is detected in the sediments, followed by another cold episode.

The faunal analysis suggests that the site occupation continued to be seasonal, although the evidence for this is not as strong as it is in the case of Level VII. The body part analyses show that whole carcases were less frequently brought to the cave than during the Level VII occupations. This is also understandable, since the preferred game was the adult ibex and this animal was hunted in areas with more difficult access than those in which Cervus fawns were hunted earlier. Thus in Level VI times the game was more frequently butchered at the kill sites, from which only selected parts were carried to Ekain Cave.

The lithic industry also shows some evidence of seasonality just as it does in Level VII. The most abundant tools continue to be microliths, with few middle-size tools such as burins, endscrapers, etc., although the backed bladelets are not as extremely small as in Level VII. The percentage of burins does increase somewhat, a fact which could be related to the greater importance of the bone industry in this level. Although there are no backed micropoints in the lower part of the level (VIb), these are found in the upper part (VIa). The worked bone industry is also distinct between these two parts of the Level: VIb lacks harpoons but VIa has them. A stone plaque with engravings of an ibex, a red deer and a horse was found in Level VIa.

The faunal remains are proportionally about the same throughout Level VI, dominated by ibex. Salmon is present in both sublevels. However Level VIb lacks chamois (Rupicapra rupicapra) and reindeer (Rangifer tarandus), both species present in Level VIa. However, as the numbers of remains, especially of reindeer, are minimal, this difference between the two sublevels could be simply due to chance.

Levels V-II (Azilian), and especially Levels III and II, show a marked climatic amelioration (corresponding to the Preboreal), not only in their pollens and sediments (increase of Corylulus, Alnus, Erica... and minimum cryoalactisme), but also in the increase in roe deer remains together with the presence of boar and badger (Meles meles). The disappearance of the Nordic vole (Microtus oeconomus), present in Levels VII and VI and the appearance of Myotis myotis confirm this climatic amelioration.

The subsistence base returned to red deer hunting in Azilian times. The site again seems to have been used only seasonally, judging from the ages in months of the young Ungulates which were killed. The human inhabitants of the cave also exploited marine resources (shellfish). Molluscs pertaining principally to the genus Patella and Monodonta are found in large quantities especially in Level II. These resources would have been more accessible from
Ekain at this time than in the Magdalenian, since the coast was much closed due to the post Würm rise in the sea level.

The lithic artifact assemblages of Levels V-III are Azilian with a progressive increase in backed micro-points, backed bladelets and backed truncated bladelets. In Level II, which is still Azilian but with Sauveterrian influences, there is an increase in the number of Mesolithic type points, together with the presence of a few triangles and the appearance of the microburins technique for microlith manufacture. The bone industry of Levels V-III includes a classic flat section harpoon with a button hole perforation, as well as a wand with simple decoration, interesting due to its presence in an Azilian deposit. There are no worked bone objects in Level II.

In summary Ekain contains evidence of sporadic visits by humans during the earliest phases of the upper Paleolithic. More importantly, this cave, with its magnificent rupestral art sanctuary in its interior, was an important living site occupied intensely, albeit only seasonally, from the Lower Magdalenian through the terminal Azilian. The cave occupants had their base elsewhere, however, perhaps at the cave of Urtiaga or other caves in the region.

(Translated by L. G. Straus)
(University of New Mexico)