

>NEWS FROM ATAPUERCA IN ENGLISH



>> 29TH EXCAVATION SEASON/ 2007
 Oldest European tooth found in Elephant Pit. > 1.2 MY hominid premolar
 > Arrival in Europe wound back 400,000 years

On 27 June, Atapuerca Foundation scholar Rosa Huguet was digging the lowest levels of the site in the railway cutting known as Sima del Elefante (Elephant Pit) with companions Jan van der Made, Marcos Terradillos and Palmira Saladié. They were working on a level which in previous seasons had yielded flint and limestone tools as well as many bird and small mammal bones, particularly from carnivores. Some of the bones bore cut marks made by the hominids who lived there and had used the stone tools to remove the flesh. There was barely any remaining sediment attached to the profiles left at the end of the previous year's dig, so no important discoveries were expected, or at least nothing that would change what was already known about this level, known as TE-9 in archaeological shorthand. Unexpectedly, a bone fragment appeared, along with a somewhat worn second lower pre-molar belonging to a possibly 20-25 year old hominid. It is quite common for human remains to be "discovered" every season, but none had been found previously in Sima del Elefante, and no human remains at all had been found at a level as old as Level 9. This is not just another tooth for the fossil record. It is the oldest human tooth ever found in Europe. It is possibly 400,000 years older than the previous oldest European specimen, also discovered at an Atapuerca site: Homo antecessor, found in Gran Dolina. It is definitely more than a million years old and possibly dates back 1.2 MY. This summer, new samples were collected for dating, and our specialists will now have to help us refine the accuracy of its chronology to perfection.

>>GRAN DOLINA. Work on TD10 has allowed us to recover thousands of remains of large mammals, particularly bison, and 700 late Acheulian tools. The cave seems to have also been used as a regular campsite by Homo heidelbergensis populations. At Level 6, we were able to prove the existence of several levels containing different human occupations- at least three have been defined to date. Many tool remains were unearthed as well as large flint blocks which had been brought in and worked inside the cave, and 19 Homo antecessor bones, including a child's collarbone and a bone from an adult's skull. >Sima de los Huesos (Bones Pit). Work focused mainly on the geological and stratigraphic aspects, both at the bottom of the pit and in the surrounding areas. One highlight was the discovery of another Homo heidelbergensis skull, scientifically labelled Skull 16, which belonged to an adolescent girl. It was found in several fragments including its parietal, frontal and jawbone.

>HOTEL CALIFORNIA. During the second digging campaign at this site, more than 200 stone tools were found, almost all made from local material, Neogene flint. This settlement on the left bank of the Pico River, from where the valley could be monitored, was visited from the late Middle Pleistocene through the Upper Pleistocene. Tools made from Cretaceous flint and lydite, an uncommon material in these hills, have also been found in all three documented archaeological levels. The industrial assemblage, predominantly medium and large-sized flakes, together with the number of watercourses surrounding the settlement, plus the raw material, has led us to believe that this site was visited as a resource supply point, i.e., the Neanderthals did not set up camp here, but rather visited it recurrently for water, hunting and gathering.

>EL MIRADOR. This was the ninth digging season in the El Mirador (Lookout) cave, and we had a clear goal: to complete the removal of fallen rock begun three years ago, which is still blocking the archaeological dig and preventing access to the lowest levels. At the end of the season, three more metres of rock were exposed (eight in all), and hope was in sight of coming to the end of the rock and revealing a new archaeological

A selection of highlights from the previous issue

cal level, which has been postponed till next season.

>PORTALÓN. This season's campaign focused on the Calcolithic (recent prehistoric) levels. Grazing and agriculturalist groups lived in the cave, and left a heritage of bones from animals stabled there (sheep, goats, cows, etc.) and the tools they used (sickle teeth, arrow tips, etc.). There is also a large volume of botanical residue such as charcoal and seeds, which will help us to reconstruct the environmental context.

>COVACHA DE LOS ZARPAZOS (BEAR CLAW CAVITY): This season, we worked on the base of Unit GIII and the roof of Unit GII. A total of 1,097 items were recovered, more than 300 of which are from fauna, 35 industrial items, 6 plant imprints (probably roots) and one charcoal. A positive plaster cast was made of one of the plant imprints, probably a root, which was almost a metre long.

THE MAGIC MOUNTAIN DOES IT AGAIN

>Rosa Huguet Pàmies Zooarchaeology. ERG member. Universitat Rovira i Virgili. Tarragona.

A few years ago I was encouraged to do my PhD thesis on the earliest human occupations in Europe, focusing on their palaeo-economy and the different types of occupation by these groups in the environments where they lived. The proposed subject matter was extremely attractive, but there was little known data because of the poor fossil record. Nevertheless, I very soon became aware that while the record was not particularly large, I had direct access to Europe's best Lower Pleistocene fossil record, the one dug up in the Atapuerca Hills, particularly the lowest levels of Gran Dolina and Sima del Elefante.

The study of different archaeological as-

semblages has led me to detect the presence of human groups in the Atapuerca Hills 1.2 million years ago. I have also documented differences in the types of occupation by the early settlers in the caves. In some cases, the hominids used the caves as points to get animal resources, as in the case of Level TD6, while in others, they were campsites, as in Level TD6, both in Gran Dolina. The archaeological record retrieved from the lowest levels in Sima del Elefante shows that there was no human occupation inside the cave, but rather at a point near the entrance. Using all of these data, I have inferred that the human groups which inhabited the Atapuerca Hills during the Lower Pleistocene occupied a territory that covered at least 100 Km2 and was

rich in plant, animal and stone resources throughout the year. They also had access to drinking water and shelter areas, possibly like the cavities that riddle these karst mountains. The groups consisted of 20 or 25 people who interrelated with other groups for reproduction. Last July, a human tooth was dug up at level 9 in Sima del Elefante. The es-

timated chronology for this level is roughly 1.2 MY BP, which makes this fossil the oldest known human remain in Western Europe. In personal terms, the presence of a human fossil remain like this one in Sima del Elefante gave me great joy because it has raised people's appreciation of a site to which many of us have devoted a lot of energy, time, work, effort and dreams. It has also produced further backing for one of the conclusions of my PhD thesis, which is that human groups were present in the Atapuerca hills more than a million years ago. Once again, the record dug up in the Atapuerca Hills has highlighted the fact that this is a major area for the study of

recovery excited me. I was with Jordi Estévez, and I said to him, "I want to dig at Atapuerca, whatever the cost". I spoke to Professor Aguirre, and he asked me to draft a project. I sent it to him two years later, and in May 1978, he sent me a letter in which he told me, "Your project has been accepted. We can start digging".

-What impression did you get on your arrival?

-We were in Galeria, and I gathered a few flint items from the Tres Simas cut. I realised that I was faced with something exceptional, and I uttered a sentence which I have repeated often since then: "The only way I am going to leave this place is boots first".

-Was in the madness to dare to dig on those vertical cuts at that time?

-Absolute madness. Six people confronting this universe of karst backfills! We had nothing, we walked up with our tools from Ibeas. It took us a week to set up the scaffolding, we dug for a week, and the following weekend, we had to dismount it all. The digging seasons yielded very few results.

-Can you recall any curious anecdote from that time?

-I remember we were working on Gran Dolina where there was a wasp nest, and we decided to do a fast-track extermination. We bought 5 litres of petrol, chucked it in, lit a match and "Boom!", it exploded and thousands of fried wasps fell into the Cutting. The next morning, we saw some wasps were still inside. A gentleman from Palencia was visiting, and offered to remove the queen wasp. 15 seconds later he was covered in wasps. He had to be rushed away for emergency treatment. Nobody had told him about our extermination the day before.

-Was your passion for science what allowed you to survive through your PhD experience in Paris?

-I believe learning is the most beautiful thing that can happen to a human

objects to explain how they develop and complement natural selection.

-What has been the most important discovery for you?

-After 30 years, I regard Atapuerca as an on-going discovery, and in fact the discovery of the 1.2 million year old tooth this year has ratified my ideas on this point. Our big research work was done in the 1990s, with publications in Science and Nature, and when we thought they had been more or less concluded, it has astonished us once again with the discovery of the tooth in the Elephant Pit. I have often said that Atapuerca will yield many surprises, but this year it has even surprised me.

-In the light of the information now available, when and where do you think that first move out of Africa happened?

-The big exit was probably along the Palestine corridor about 2 million years ago. The species we are discovering now, Homo antecessor, the tooth that has just come out of Sima del Elefante and whatever else may emerge, derived from that event. My opinion is that they are populations that derived from Homo georgicus- Eurasians, not Africans. We will have to go on revising these questions in the future.

-What do you imagine life was like for those early Europeans?

-Much simpler than now: it was a question of eating, drinking and breeding.

-And what about isolated episodes like the cannibalism found in TD6?

-That is more interesting. Last year, I proposed the hypothesis of cultural cannibalism as opposed to gastronomic cannibalism, although obviously it was also gastronomic because they were eaten. When I saw that "cannibalised" hominids appeared throughout TD6, not just in the Aurora strata, I began to think about this hypothesis: that there were groups which were cannibals structurally, and consumed the offspring of newly arrived groups in these hills to prevent competition. So cannibalism was a culture which drew together the group that lived here.

-Is science nowadays a useful service for society?

-Yes, of course it is. Science is constructed by people who in turn compose our social structure. There is either sociable science or there is no science.

-How can the study of remote societies dating back to the Palaeolithic help us to transform our own society?

-As a 21st century Marxist, I think the most important thing is to understand the past through the way we want the future to be. In this century we are now raising fundamental questions like "Where is our species heading?" and "Where should it be going?". By proposing the replacement of chance with logic, we can begin to revise the past. To construct a future we first have to try to understand what we want.

-Which site has made the biggest impact on you?

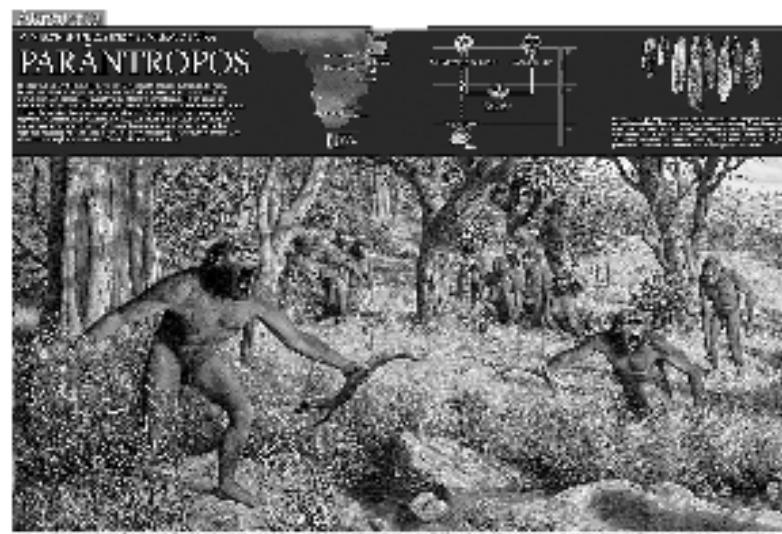
-I was incredibly impressed by the Koo-bi Fora site in Kenya. It was an astral journey- so astral that we almost died in the desert because we lost our water. When I came back from that trip, from those emotions, I spent several months feeling very uncomfortable in Europe. For the first time in my life, I sensed the African myth of our origins, something I have never felt in any other country or continent. When you're in Ethiopia, in the Awash or the Rift valley, right in the thick of it, you realise that our origins are in Africa, and you feel very close to them. Now I go back there four times a year.

-Are we now conscious of ourselves as a species?

-I think so. Look at the example of the demonstrations by 200 million people all over the world against the Iraq war. That is the beginning. Our awareness of our species began when the atomic bomb could have been triggered during the 1963 missiles crisis. Since then we have been aware that we can destroy the world, and it is only when you are aware of the fact that you can destroy that you can begin to understand how to construct it in practice.

Revolution or Involution?

If there is no revolution, there is involution, and it would be dreadful if this planet were to become involuted, because it would be a waste of an immense amount of energy that has cost thousands and thousands of lives and sacrifices- an immeasurable amount. We must not accept any involuntary process, if only on account of their memory- this forward-looking memory, out of respect for our species, out of respect for ourselves. And if the need arises, if it becomes necessary, one must die for others. Although nobody should have to die for anything, I am prepared to die to improve our species. But that is all: I would never be willing to die for anything else.



EUDALD CARBONELL. Atapuerca co-director since 1991

"CANNIBALISM IN TD6 WAS CULTURAL, NOT GASTRONOMIC"

Eudald Carbonell i Roura (Ribes de Freser, Gerona, 17 February 1953). Professor of prehistory at Rovira i Virgili University in Tarragona and Director of the Catalonia Institute of Human Palaeoecology and Social Evolution (IPHES).

-When did your interest in archaeology begin?

-I started school at an Opus Dei college, which made me a Communist for the rest of my life, and I remember having begun my collection of marine fossils at the age of 4. My first digs were in 1966, at a site near my school, the Encantadas de Rialt caves. We spent our ti-

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CONTINUITY AND/OR DISCONTINUITY IN THE PLEISTOCENE PEOPLING OF EUROPE?

SILVANA CONDEMI

> The numerous fossil discoveries made after 1989 at the Dmanisi (Georgia) show that by 1.8 million years ago, the oldest representatives of the genus Homo had left their original African habitat and could be found on the periphery of the European continent. The hypothesis of their European presence was defended by a number of authors (...). As a result of the discovery of relevant artifacts, human presence in Europe between 1,000,000 and 700,000 years ago has been asserted for a long time. The artisan of these lithic industries is known to us, thanks to human fossil remains discovered at two sites in southern Europe: at La Gran-Dolina de Atapuerca (Spain) and in Ceprano (Italy).

Are they representative, of a particular

species, which certain researchers call Homo antecessor or H. cepranensis? What is the relation of these species to the later European fossils classified as H. heidelbergensis and to the Neanderthals? (...)

The only well documented and recognized continuity in the peopling of Europe is that between 450,000 and 35,000 years ago, in other words that corresponding to the evolution of the Neanderthal population. This population is distinctly European and is characteristic of the peopling of the European continent. However, its continuity with populations that preceded it is far from clear.

In the present state of our knowledge and on the basis of available chronostratigraphic data, the great merit of studies on the

me sieving sediment that had been dug up at the beginning of the century. I found a Roman coin, which didn't change my life although it did change the life of my family, which didn't believe any of this stuff.

-What was the scientific environment like when you were at university?

-Quite dreadful. Of course it was nothing to shout about, and if I hadn't had a serious interest in human evolution, in archaeology, I probably would have ended up doing something different.

-What references led you to the Atapuerca Hills?

-In 1976 there was a congress in Morella, where Professor Emiliano Aguirre and Trino Torres showed us a box which supposedly contained a Homo erectus jawbone from Atapuerca. The dis-

being, because it is never-ending. The more you know, the more you want to know. I wanted to know everything and to keep on learning. At one stage I lost 20 kg. I slept anywhere; all I did was study, and I lost touch with reality. At one point, for example, I was so focused on my work that I stopped talking. The image I projected must have been something like a mad mystic, but I recovered, and at 36 years of age, contrary to what my parents thought, I found a job.

-At that point you were writing your thesis. What were your main conclusions?

-The idea was to use theory, information, systematics and dialectics to build up an analysis system that would give stone objects a meaning in time and space. I wanted the dynamic analysis of