



>IN THE SITE

WE ARE ALL AWARE OF THE KEEN INTEREST IN ATAPUERCA OUTSIDE SPAIN > One of the steps we are taking to publicise our research is a summary page of the previous issue in English.



EXCAVATIONS 2002: ANNUAL SEASON EXTENDED TO TWO MONTHS

> Simultaneous digs at 7 Atapuerca sites for first time. Atapuerca 2002, the silver anniversary of work at the sites, will herald in important novelties. The excavation season will be extended to two months, and work will be undertaken at seven sites at the same time. New technology will help to speed the process of digging down to the Homo antecessor level. The team expects to reach a zone containing complete human bones in the Sima de los Huesos (Bones Pit), while in the Sima del Elefante (Elephant Pit), the area containing the fireplace discovered in 2001 will be broadened in search of more evidence of human presence a million years ago. The Portalón de Cueva Mayor (Main Cave Portico) and the Cueva de El Mirador (Lookout Cave) may well yield evidence of art work in addition to information on the origins of the Neolithic in these mountains. In the Valle de las Orquídeas (Orchid Valley), we will try to define the lifestyle of the last hunter-gatherers who occupied the Atapuerca area.

The major novelties for this year will be an evaluation survey of Cueva de El Mirador and work on the Galería-Covacho de los Zarpazos (Gallery-Claw Marks Cavity) complex. In El Mirador, we will try to lower the survey level begun in 1999 in order to verify the potential and richness of the Neolithic levels and ascertain whether or not there were previous occupations. The El Mirador site is a key location in defining the lifestyle of the first crop and livestock farmers who lived in the Sierra de Atapuerca.

Two types of operations have been designed for the Galería complex. Firstly, the sediment deposited in the 1995 cross-section will have to be cleared and consolidated, after which the cave roof will be consolidated on account of flaking caused by bad weather which could bother visitors.

Work will also be done in the area known as Covacho de los Zarpazos, part of the same complex, where two human bones, apparently belonging to the same population that used Sima de los Huesos, have been found. Here, excavation will combine scientific and public dissemination work. We plan to produce replicas of the findings and upgrade the cave for visitors to inspect while excavations are in progress.

Analysis of the cave paintings in Cueva Mayor-Cueva del Silo is still underway. For the last two years, experts have been studying the walls, copying and photographing every prehistoric trace of paint, stain, and engraving they find. Progress is being made in our understanding of the Neolithic and Bronze Age artwork. Another study begun in 1998 has been a geological survey of the Sierra environs, including topographic maps, soil studies and an analysis of the sediment. This study will provide an insight into the trends in the landscape and correlate the outdoor sites with the cave locations.

NEW TECHNOLOGY FOR THE DIGS > This year, an important experiment will be used at Atapuerca to record the items as they are unearthed. Under an joint arrangement between IBM, the Industrial Automation Institute of Spain's National Research Council and the Atapuerca Foundation, powerful electronic equipment and its accompanying computer programme will enable every item of information from the excavations to be recorded on computers in real time as work is progressing at the sites.

A lab prototype has been designed for this technological project, known as 3-COOR, which will be tested by our archaeologists. It consists of a series of microcomputers the size of electronic diaries that are interconnected to share the information they receive. Using wireless commu-

nications and sensor pointers, each digger will mark the items as they are found.

EXPECTATIONS MORE THAN FULFILLED

> Emiliانو Aguirre. *First director of Atapuerca research project.* In summer 1976, Trino Torres, together with Manolo Hoyos, entrusted me with the human bones that Carlos Puch and he had separated off from the piles of cave bear fossils left behind tusk seekers at the bottom of the Sima de los Huesos. To me they seemed older than Neanderthal and similar to Pithecanthropus. They were from at least four individuals and there had to be more where they had come from. It was certainly most unusual.

I let them guide me to the Trench. We had to scramble to get a good look at the upper levels. Bones from mammals, both large and small, along with stone tools were poking out of the stratigraphic cross-sections. A lot could be learned about the evolution of the climate, the land, its fauna and vegetation, its colonisers, the progress they had made over several millennia and, using careful calibration of the successive time periods, what was buried there.

It could well be the richest site in remains of human evolution anywhere in Europe, and one of the best in the world. But there had to be two conditions: One, that the material that had filled up the ancient cavities had to be excavated methodologically and unhurriedly, starting from above with the most recent levels; deciphering, drawing and sketching, carefully recording the location and three coordinates of each object before it was removed from the soil. Two, that everything moved from its place and the relationships between each object were analysed in depth by experts: rocks, backfilled sediment, walls, floors and ceilings of the caves by geologists; plant remains and grains of pollen by palaeobotanists; animal fossils and their disturbances by palaeozoologists and taphonomists; human fossils by palaeoanthropologists and palaeopathologists; stone tools and every slender piece of evidence human activity by archaeologists.

In Spain there were good palaeolithic archaeologists, but few ski-

lled in working in complete teams and such difficult sites, in backfilled caves from before the Upper Pleistocene. The material hidden in the Sierra de Atapuerca limestone promised extraordinary unique documentary treasures, but it had to serve from the outset as



both a school and a job-training institute for specialists at the same time. Over 15 have now earned their Ph.D.s at different universities on the basis of new advanced research into items uncovered in the Sierra de Ata-

in the early days, when certain people with a degree of authority began to believe in our project and supported its commencement, as did the Edelweiss Caving Group which generously lent its support. We soon had to choose students applying to participate on a merits basis: the budget could not provide for everyone, not even in two shifts, but the joyful atmosphere was a great stimulus.

OTHER LOWER PALAEO-LITHIC SITES ON THE IBERIAN PENINSULA

> IN SEARCH OF THE PAST. Excavations are now underway at several sites from the Lower Palaeolithic period (from the beginning of stone tool production until the appearance of the Neanderthals). This report highlights the major projects which will no doubt make a decisive contribution to our understanding European the lifestyles and ecosystems during this pe-



riod. > LEZETXIKI / IRIKAITZ (GUIPÚZCOA, BASQUE COUNTRY). The Lezetxiki site is a tunnel-shaped cave where excavations began in the 1950's. Soon afterwards it yielded a humerus, the oldest human remain in the Basque Country. The fact that it was from the Homo heidelbergensis species, profusely represented in the Sima de los Huesos record less than 300 km away, has led to renewed excavations since 1996 in order to prevent the deterioration of the site, permit the application of new analysis techniques and, if possible, to establish a relationship between the two sites.

The Irikaitz site also has an interesting stratigraphy with an open air primary position, with a large number of stone remains that are contributing to our understanding of the production lines that developed during the Lower Palaeolithic.

> ALMONDA KARST SYSTEM (SANTARÉM,

PORTUGAL). There are at least four caves from this karst complex, with remains from the Lower Palaeolithic identified amongst the backfill material. The magnificent sequences and preservation of the fauna and industrial items have brought this assemblage to the forefront of analysis of the oldest stages of the Palaeolithic in Western Iberia.

> SANTA ANA CAVE (CÁ-CERES, EXTREMADURA).

The 150,000 years spanned by the stone tools found in the Santa Ana Cave have had a profound impact on archaeological research in Extremadura. The team of scientists working here since the year 2000 under Prof. Eudald Carbonell has recently presented evidence proving the habitation of this land during the Lower Palaeolithic, something previously suspected but hitherto unproven.

> LA CANSALADETA (TARRAGONA, CATALONIA).

Set in a shelter on the banks of the Francolí River where it passes through the Riba Narrows, the La Cansaladeta site has yielded new archaeological levels with a mass of fauna and stone industry remains, based on the presence of both retouched and non-retouched items. The age of this site, calculated from its position in the river terrace system, is from the end of the Lower Palaeolithic.

> GUADIX-BAZA BASIN (GRANADA, ANDALUSIA).

In the north-west of Granada Province, this basin is extraordinarily rich in both archaeological and palaeontological sites. The highest density of fossils anywhere in Europe has been found in a 16 km stretch of land between the town of Orce and the outlying settlements of Fuente Nueva and Venta Micena. The definition of a strict chronostratigraphy of the European Plio-Pleistocene, along with the discovery of a stone industry dating back more than a million years at the Fuente Nueva 3 and Barranco León sites, have made this one of the most interesting areas for research into numerous aspects of the earliest human presence in Europe.

> TORRALBA AND HAMBRONA (SORIA). Although these palaeolithic sites are not being excavated

at present, they have both played an important role in the advance of Spanish



and European research into prehistory. Intense debates surrounding the degree of involvement of human groups in the large numbers of animals found here have now given way to a less anthropocentric explanation that essentially appreciates these sites as a natural scenario dating from half a million years ago.

> CUESTA DE LA BAJADA (TERUEL, ARAGON).

Urgent work undertaken on the middle terrace of the Alfambra River in 1990 and 1991 yielded a large number of bone and stone items with features that indicate they are from the Lower Palaeolithic. New work planned for July 2002 will be primarily aimed at defining the site area, currently estimated to cover several hundred square metres, and expand the excavation work to check for the future potential of the site.

> BOLOMOR (VALENCIA).

This site, known since the 19th century, contains the oldest and broadest evolutionary sequence linked to man in the Valencia Region. The earliest thermoluminescence datings have been set at around 350,000 years BP, and there is proof of the use and systematic control of fire between approximately 150,000 and 100,000 years ago, estimated to be the end of occupation here.

> ÁNGEL CAVE (CÓRDOBA, ANDALUSIA).

This cave, on the southern slopes of the Sierra de Aras, was the focus of urgent excavations in 1995 and 1996. Now, after six years of inactivity, digging will recommence as part of a project to ensure that work continues on a site that has yielded a large amount of stratigraphic evidence and a large volume of animal remains as well as over 25,000 stone industry items.