

SPAIN EXPEDITION

Tracing the Transition from Neanderthal to Cro-Magnon in Western Europe

Dr. Ana Pinto Llona journeyed to her archaeological site at a limestone rock shelter, high in Spain's Cantabrian Mountains, carrying Wings WorldQuest Flag #4 in June 2005 to begin her fourth field season.

The site contains an intact and large succession of strata, all archaeologically fertile, bearing testimony to the disappearance of Neanderthal culture and the appearance of modern humans around 35,000 years ago.

Fragments of ancient tools, bones, and teeth yield clues about diet, hunting, and other behaviors. Ana is studying the differences in these behaviors that would have benefited modern humans, while contributing to the extinction of Neanderthals.

THE IBERIAN COAST: THE LAST STRONGHOLD OF THE NEANDERTHALS - THE FIRST EUROPEANS

Neanderthals, descendants of African *Homo erectus*, were the only inhabitants of Europe 150,000 years ago. Around 35,000 years ago, these people were abruptly replaced by the Aurignacian culture (associated with Cro-Magnon man). Some of the last remnants of Neanderthals have been found in coastal sites of the Iberian Peninsula.

The Sopeña site is a rock shelter in an outcrop about 250 meters above the Güeña River valley in the Asturias region of northern Spain. The site shows sixteen layers and includes evidence of this cultural change.



Dr. Ana Pinto Llona holds Wings WorldQuest Flag #4 at the Sopeña archaeological site, a rock shelter in the mountains of northern Spain.

FINDING A WINDOW INTO THE PAST

Ana explored and probed several caves in northern Spain looking for evidence of the origins of modern humans. Previously, she worked in caves with fossils of mammoths, elephants, rhinoceroses, lions, and leopards, gaining insight about the extinction of these animals in southern Europe.



WHO

Dr. Ana Pinto Llona

WHAT

Archaeological excavation

WHERE

Cantabrian Mountains of northern Spain

WHY

Understand and compare the behavior of Neanderthals and modern humans of the Iberian Peninsula

Her test excavation at the Sopeña rock shelter in 2002 revealed an occupation sequence that included the first arrival of modern humans in Europe, back to the time of the Neanderthals, and even farther back to the time of *Homo erectus*, a more ancient ancestor.

WORKING AT THE SOPEÑA SITE

In 2004, Levels I and II were excavated. Eighteen volunteers joined Ana for the 2005 field season, from June 15 to August 15, to begin work on Level III.

Monday through Friday, work followed a predictable schedule. By 9 A.M., after an invigorating uphill walk to the site, one group went to work in the field lab and another at the rock shelter. Excavation yielded larger items, which were recorded, but the dirt from each layer was carefully removed and sieved in water at the field lab to find fragments. After a 2:00 lunch break, work continued until 5:30, when tools were cleaned. By 6:00, everyone was at the lab, examining the day's finds and setting them out to dry.

A HIGH-TECH APPROACH TO INTERPRETING ANCIENT CLUES

Use of technology in the field greatly facilitates tracking the items found, as well as pinpointing the location of each in the multi-layer site. A Total Station, lent by the

Department of Geology of Arizona State University, connects to the project's own hand-held Ranger computer, funded by Wings WorldQuest Foundation.



The location of the Sopeña Archaeological Project, near the northern coast of the Iberian Peninsula

This equipment records the assigned number and GPS coordinates of each bone, tool, and piece of charcoal or quartz lifted from the earth beneath the rock shelter. Each day, this field data is downloaded into GIS software, which can generate 3-D graphics showing the position in which each specimen was found in its layer.

Find out more on the Web:

Institute for Human Origins
www.becominghuman.org

C.A. Cantabrian Quaternary
www.accuca.conectia.es

Simply finding these items may not provide the whole story. To gain greater insights, other specialists were invited to collect samples to confirm the stratigraphic sequence, presence of pollens and charcoals, residual magnetism of burnt features, and magnetism from natural deposits.



Ana records the precise location of a specimen from a freshly excavated sector with Daniel Iglesias and Javier Escudero.

EXPEDITION RESULTS

The 2005 field season shows that Level III is one of the richest levels of Sopeña, making it likely that its complete excavation will take most of the 2006 field season.

Of the finds over 1 centimeter in size, a total of 12,804 were recovered in the 2005 season. Of these, 6,760 were plotted and three-dimensionally recorded with the Total Station and hand-held computer in the cave, and the remaining 6,044 were recovered from the sieves and ascribed specimen numbers in the field lab.

Another important achievement in 2005 is that the more than 40,000 specimens found during the 2002 Test Excavation have been inventoried and classified.

ADVICE ON FINDING ANCIENT SITES

Ana says that to find this rich site she had to “think like a Neanderthal.” Driving around month after month, she screened potential sites in the Picos de Europa region through ancient eyes. The best habitat for prehistoric European lifestyles:

- A southwest-facing cave to attract maximum sun and warmth
- A high vantage point above a river, providing water for the inhabitants and the animals they hunted



Ana illuminates the excavation pit for her associate, who is documenting characteristics of some of Sopeña’s sixteen archaeological layers.

ABOUT DR. ANA PINTO LLONA

Dr. Ana Pinto Llona is an archaeologist who has spent much of her life organizing archaeology and paleontology excavations in the north of Spain, her home country. Her research on extinct cave bears revolutionized views on how these animals interacted with prehistoric humans. Given the richness of finds at Sopeña, she will be excavating and analyzing this site for decades to come.

EXPEDITION SPONSORS

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Dr. Ana Pinto Llona, Sopeña’s Principal Investigator, stands proudly with her tireless 2005 excavation team.

“The cave’s habitation spans Neanderthal times and the beginnings of modern humans in Europe. Sopeña is like a book that has all the pages.”

– Dr. Ana Pinto Llona

FOUND AT SOPEÑA

Sixteen layers of archaeological evidence:

– Tools, scrapers, points, quartzite, ochre

150,000 years ago:

– Evidence of Neanderthals, the only inhabitants of Europe (Mousterian culture)

35,000 years ago:

– Evidence of Aurignacian culture (modern man)

Animal bones of:

– Bison, horse, rhinoceros, lion, giant Irish elk, hyena, wolf, leopard, red deer, and mountain goat