Cova Gran

A HOME TO HUMANS FOR 50,000 YEARS

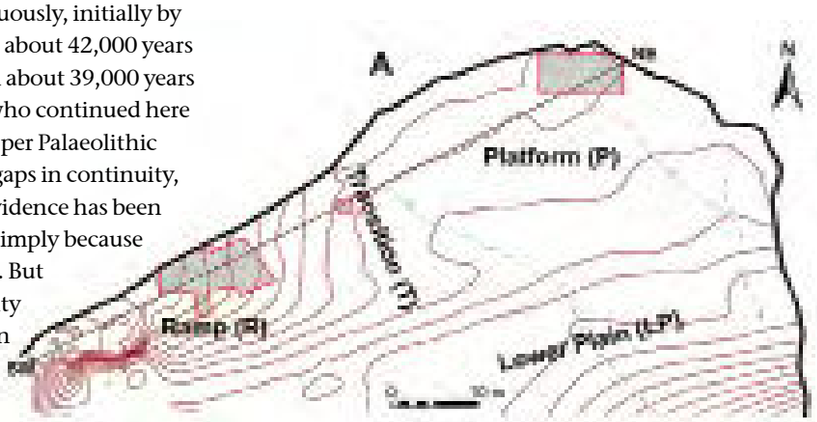


A cave in Spain witnessed the last of the Neanderthals and the arrival of the earliest Homo sapiens along the Western Mediterranean. **Jorge Martínez-Moreno** tells *CWA* about the ongoing excavation at the Cova Gran rockshelter that promise to reveal how these early humans adapted to their environment in the southern Pyrenees.

The rockshelter Cova Gran de Santa Linya nestles in the lowest foothills of the Pyrenees, about 175km northwest of Barcelona. Carved from the rock by the irregular watercourse of the Sant Miquel ravine, it lies in the Noguera-Palleresa Valley on the southern slopes of the Pyrenees. This inauspicious setting, at the entrance to the network of a valley system that stretches into the midst of the mountainous region, is fast becoming a critical location for the understanding of early human activity, and challenges established concepts regarding the extinction of Neanderthals and the appearance of *Homo sapiens* in the Iberian Peninsula.

Cova Gran is a large shelter: it rises more than 50m high, and covers an area of about 2,000m². Since 2004, excavation by a Spanish team from the Autonomous University of Barcelona and the Centro Nacional de Investigación sobre la Evolución Humana (CENIEH), reveals this was home to early humans from about 50,000 years ago, and was used repeatedly, though not continuously, initially by Neanderthals until about 42,000 years ago, and then from about 39,000 years ago by *H. sapiens*, who continued here throughout the Upper Palaeolithic periods. There are gaps in continuity, possibly because evidence has been lost to erosion, or simply because it is yet to be found. But interestingly, activity was concentrated in different parts of the shelter

ABOVE General view of the Cova Gran de Santa Linya rockshelter.
BELOW Site plan showing the three areas explored by the archaeologists: the Ramp, outside the shelter; and the Transition and the Platform that are both in the section protected by the shelter's overhang.





LEFT Cova Gran lies in a side valley of the Noguera Pallaresa river at the entrance to a valley system, that stretches into the Pyrenees. Flint blanks were sourced from outcrops (shown in pink) on nearby river terraces (black dots) close to site during its earlier occupation.

at different times: first outside the cavern's overhang during the Middle and Early Upper Paleolithic, and then, following a break in the sequence, inside the shelter from about 20,000 years ago.

The rock-shelter at Cova Gran is a complex formation created through erosion of the soft rock, carved by water flowing through the winding river gorge. Therefore, it is perhaps better to consider the site as two separate shelters, each with its own formation history, as Jorge Martínez-Moreno explains:'The deposit profiles show two shelves, and our excavation focused on two main areas of activity: one outside the shelter, the other inside, protected by the overhang.'

Outside the shelter

The outside area is a 200m² platform – called the Ramp – that lies to the west of the site, and slopes towards the interior of the cavern. Excavation of a 100m² section has revealed evidence of several changes in climate and environment during the Middle Palaeolithic, with clastic limestone reflecting periods of relatively cold climate, and granular sediments that suggest more favourable conditions. Stone tools – including cores, blanks, and retouched pieces – were recovered from eight individual levels (six from the Middle Palaeolithic and two from the Upper Palaeolithic), each separated by sterile layers without human activity that produced no finds at all.



RIGHT Lithic artefacts – burins end scrapers – from T-sector that correspond with late Magdalenian occupation in Cova Gran,.

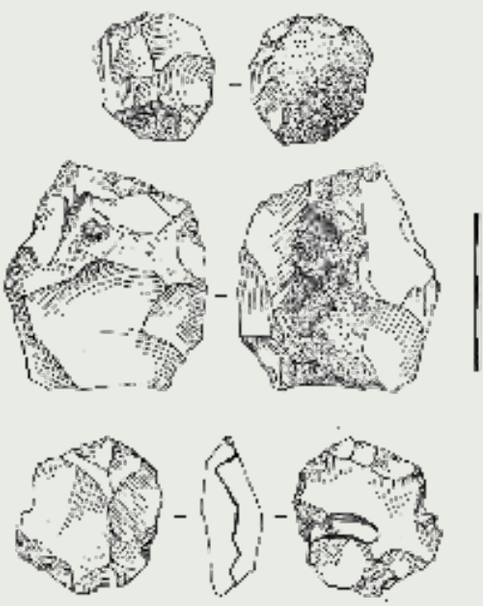
Other finds from the Mousterian levels – which, at Cova Gran, relate to about 50,000-40,000 years ago and are associated with Neanderthal occupation – suggest that at this time the surrounding landscape provided a plentiful supply of animals, especially large bovids, horse, and deer.

Later, however, in the Early Upper Palaeolithic levels, faunal remains are primarily deer, while those of large bovids and horse are rare. It is difficult to know whether a preference for deer meat was a lifestyle choice, or if the other animals had become either scarce or used of other purposes, but clearly hunting practices changed radically during this later period.

The archaeological team also found evidence for the use of fire throughout the sequence, but this also differed as time went on. Hearths associated with Mousterian levels tend to be flat and with a diameter of about 0.8m-0.5m, while those from the Early Upper Palaeolithic layers are typically pit-hearths and smaller, about 0.5m in diameter.

Such differences, may indicate differences in fire management, a basic resource in the daily life of these groups. Could these differences be clues to the transition in Europe when Neanderthals were superseded by modern humans?

Though there is no evidence of overlap, the rockshelter at Cova Gran was used both by Neanderthals and by *H. sapiens*. We see a clear break in lithic technology in the uppermost two layers, which date to about 40,000-38,500 BP and relate to the Early Upper Palaeolithic, and which herald the arrival of modern humans to the site. Not only do the stone tools differ in method of manufacture and the type of tool produces but there is also a difference in sourced material.



ABOVE Middle Palaeoltihic cores associated with the Mousterian sequence and Neanderthal presence at in Cova Gran.

BELOW Flint endscrapers, burins, retouched blades, backed points, and bladelets associated with the Early Upper Paleolithic and *Homo sapiens*.





LEFT Looking into the shelter beneath the 50m high overhang of Cova Gran.

Looking first at the knapping technique, the tools retrieved from the Mousterian sequence, associated with Neanderthal presence at Cova Gran (see illustration p.23), were made from large quartzite blanks sourced from the fluvial terraces less than 5km away, and carried back to the shelter to be worked. The knapping technique involved direct percussion with a hard hammerstone to produce small, squat flakes less than 4cm wide. Blades and points are rare, while larger flakes were often retouched, to create smaller pieces or retouch the edges. This opportunistic, expedient technological style is typically associated with the Middle Palaeolithic of Western Europe.

Then there is a break in lithic technology tradition. Tools recovered from the uppermost levels are almost entirely of flint. Moreover, while most of the flint comes from local outcrops, some was brought in from a source 20km way. The knapping style is also different: long blade-type blanks were produced, and large quantities of flakes. Retouched tools include retouched blades, end scrapers, and burins (with a chisel point) associated with points, backed bladelets, and artefacts not present in the Mousterian levels at Cova Gran.

Significantly, the archaeologists also recovered personal ornaments made of marine shells that had travelled from the Western Mediterranean some 150km away. Such artefacts represent an appreciation of symbolism, and are typically associated with the appearance of modern humans.

Inside the shelter

The second area of activity on the site is on an almost horizontal shelf that extends below the shelter overhang across a 2000m² surface. The accumulation of natural sediments and the archaeological record suggest 20,000 year-time span that overlaps with the Ramp area – it is possible that the Ramp sediments once extended to cove this area but have since disappeared as a result of natural erosion.

Two areas of excavation were explored in this part of the shelter: a 2m by 2m text pit, called Transition (T) sector; and a zone covering 49m², the Platform (P) sector. Both sections have similar sedimentary components, which show this area was once flooded, either from karst springs or the nearby river.

The oldest occupation layers in P-sector date to about 20,000-18,000 years ago, after the onset of the Late Glacial Maximum. Here, a 1.9m thick sequence of rock fall debris is interspersed with archaeological layers containing hearths, components of the microlithic tool kit – bladelets, points, and scrapers – along with huge undecorated antler spears and bone needles. The team also recovered characteristic Upper Palaeolithic ornamentation derived from marine shells and perforated teeth.

This cultural tradition is associated with the spread of hunter-gatherers across much of continental Europe, which was still experiencing extreme climatic conditions, and is reflected also in the sequence excavated in T-sector. Here, a 2m-thick succession indicates the shelter was visited on multiple occasions over an

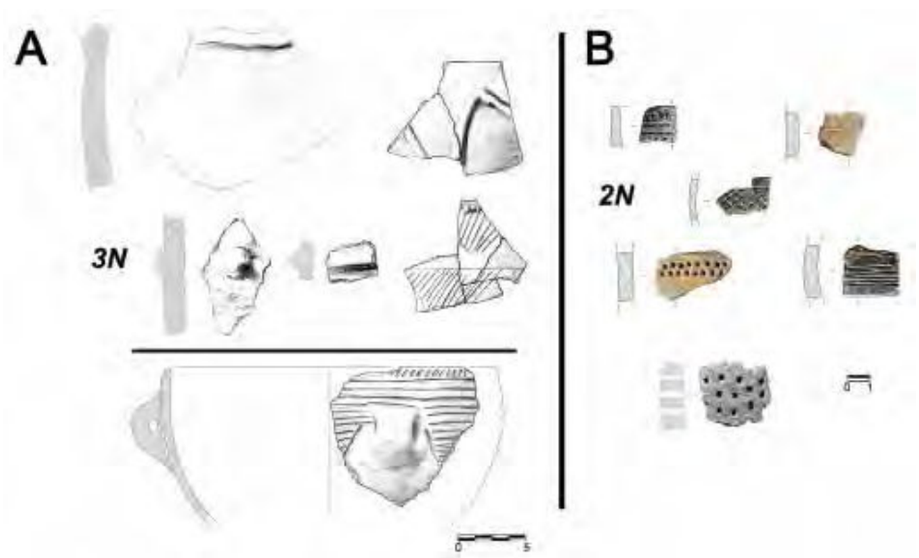
BELOW Beneath the overhang of the shelter, excavation revealed the Pleistocene levels of orange angular rockfall and Holocene grey clays. A Neolithic pit-hearth can be seen at the top.
RIGHT General view of Neolithic occupations in P sector, with hearths and storage pits associated with the Early, Middle and Late Neolithic.







LEFT Excavating Neolithic sheep and goats' pens, evidence that early shepherds sheltered, and possible lived, at Cova Gran about than four or five millennia ago.



ABOVE Finds associated with the preparation of milk and cheese production dating to the Late Neolithic, with animal husbandry began to play a dominant role in the use of the site. Pottery sherds from archaeological layers. A) Upper: Local Veraza tradition pottery, Late Neolithic. Lower: Fragment with Cardial decoration, Early Neolithic. B) Pottery sherds with Bell Beaker decoration and a cheese-strainer fragment (Late Chalcolithic-Early Bronze).

extended period. Lithic tools from this trench are simliar to but more recent than those recovered from P-sector nearby. However, no bone or shell ornaments were found. Excavation is ongoing but recent analysis suggests an intense period of occupation gives a date of about 17,000-16,000 years ago and, as such, Cova Gran promises to provide fresh insight into the Magdalenian, one of the later cultures of the Upper Palaeolithic in western Europe between 20,000 and 15,000 years ago.

Shepherd's shelter

There is a 10,000-year gap in the human history of Cova Gran, between about 15,000 and 5,000 years ago. It is possible nobody ventured into this shelter during that long period, but more probably the ground was eroded by heavy flooding during the Early Holocene, wiping out all traces of human activity.

Then, evidence of human activity in P-sector signals the presence of new occupants at the shelter: early farmers, pioneers of the Early Neolithic. But, the greatest changes at Cova Gran appear during the Late Neolithic period: more than 30 hearths and pits associated with daily activities have been recorded in the excavated zone, dating to about 5,500-5,000 years ago.

Animal husbandry now played a dominant role in the life of the site: massive accumulations of animal dung revealed two cycles of penning, when sheep and/or goats were corralled at Cova Gran. The first stretches from about 5,000-4,600 years ago, the second from 3,900-3,000 years ago. Again, it seems probably that the intervening period has been lost to erosion. Whether the livestock was kept permanently at the site or were brought here on a seasonal basis is still being investigated.

The trench in T-sector produced further evidence of farming life, with finds including fragments of cheese-strainers and traditional pottery associated with preparing milk by-products. Laboratory analysis of animal dung deposits from this area also revealed that it had been burned to clean and prepare spaces for habitation.

Long history

Excavation continues at Cova Gran. Its long history of human occupation is already providing clues to the earliest human societies 50,000 years ago, and that crucial transitional period when Neanderthal groups, such as those who sheltered beneath the huge overhang cut from the alley wall, were replaced by *H, sapiens* hunter gatherers, who were themselves superseded by early farmers and shepherds. And, as more areas are opened up, archaeologists may well come across evidence from the periods wiped by erosion from the areas already investigated. Clearly, there is much yet to come from this extraordinary and unique site. ◘

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FURTHER INFORMATION

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