The prehistory of Xàbia and its surroundings
Source material: Quaderns del Museu de Xàbia 2019 - Vol 3
English version with permission of the authors

Foreword and Editor’s notes on the English version

The printed version of Quaderns Vol 3, in Valenciano, consists of a long overview by Rubén Cebrián Miralles within which three stand-alone articles by other authors are interspersed. These focus on specific local excavations: The Cova del Barranc de la Foradada, the Cova del Barranc del Migdà and Cap Prim. For the sake of continuity in the English version we have presented the overview in its entirety, with the specialist articles afterwards. We have also introduced sub-headings into the text to improve its readability.

We have tried to write the English version in a style which is of interest to a scholar, but also accessible to a layman. The prehistory of this area is very different to that of northern Europe, and much of the terminology will be strange to English speakers. We have therefore included notes about timelines and an extensive glossary to help the reader put the information into context.

The text uses a number of different timescales to describe prehistoric periods:

1. **Years:**
BP: before the present and BCE: Before the Current Era (equivalent to BC)

2. **Geological time:**
The events described in these articles took place in the Pleistocene and Holocene epochs of the Quaternary era.

3. **Glaciations:**
The Pleistocene epoch was characterised by glacial activity. However, different classifications for glaciation are used in different parts of the world. These articles use the geological terminology for glaciation in the Alpine region, hence the **Würm** glaciation.

4. **Time related to human development:**
   - Palaeolithic: Old Stone Age - (lower, middle and upper, or early, middle and late). The time of hunter-gatherers.
   - Epipalaeolithic / Mesolithic: transitional phase at the end of the final glaciation.
   - Neolithic: New Stone Age – advent of agriculture
   - Chalcolithic: Copper Age – beginning of metallurgy
   - Bronze Age

5. **Stone tool industries:**
Archaeologists classify prehistoric stone tools into *industries* (also known as complexes or techno-complexes) which share distinctive technological or morphological characteristics. The study of such tools is known as *lithic analysis*. This classification provides pointers as to how prehistoric human
cultures developed. The industries referred to here are (in chronological order): Mousterian; Aurignacian, Gravettian, Solutrean and Magdalenian

The diagram below (in Spanish) illustrates how these timelines relate to each other and the following maps (from the printed edition of Quaderns Vol 3 and public presentation of the journal) show the locations of some of the sites mentioned in the text.

Translation team:

Christine Betterton-Jones (Coordinator), Julie Freeman, Margaret Morgan, Patricia Penny, Mary Sears.

(Volunteers from : Amics del Museu de Xàbia - AMUX – Friends of the Xàbia Museum) April 2020

Diagram from Historias Global2018 – Etapas de la Prehistoria
Location of the main archaeological sites in the Xàbia area referred to in the text
(Image from Quaderns del Museu de Xàbia Vol 3)

Epipalaeolithic sites in Xàbia in relation to the Gorgos and Girona rivers and sites inland
(Image from public presentation of Quaderns Vol 3 by Rubén Cebrián Miralles January 2020)
CONTENTS
The first days of human occupation: prehistory
Rubén Cebrián Miralles

Introduction / summary 1

History of investigation – Earlier studies 1

◦ Early 20th century 2
◦ 1950s and ‘60s 3
◦ 1970s - present day 4

Hunter-Gatherer societies 6

• The first phases of human settlement 6
  ◦ Early Palaeolithic - before Homo sapiens 6
  ◦ The Middle Palaeolithic - The Mousterian 7
• The beginnings of the Upper Palaeolithic: the arrival of Homo Sapiens 9
  ◦ The last Neanderthals 9
  ◦ The Upper Palaeolithic in the Marina Alta 9
  ◦ The Environment and subsistence of Cromagnon man 10
  ◦ A seasonal pattern of occupation – Upper Palaeolithic - The Gravettian 11
  ◦ Regionalisation – Upper Palaeolithic - The Solutrean 11
• Specialist hunters – The last phases of the Palaeolithic 14
  ◦ The Magdalenian 14
  ◦ Palaeolithic art in the region 15
• The Last Hunters - The Epipalaeolithic 17
  ◦ The beginning of the Holocene 17

Agricultural and livestock societies 20

• The earliest village communities. 6th - 5th millennia BCE 20
  ◦ The Neolithic 20
  ◦ Dating methodology 20
  ◦ The introduction of agriculture 20
  ◦ Macroschematic rock art 21
  ◦ The seasonal use of marine resources 22
  ◦ The daily lives of the first farmers 22
  ◦ Neolithisation of the area 24
• The expansion of settlements. 4th- 3rd millennia BCE 25
  ◦ Evidence in the Marina Alta 25
  ◦ Funeral rituals – collective burials in caves 26
  ◦ The influence of the Bell Beaker culture 27
• Widespread occupation of the area in the 2nd millennium BCE 29
  ◦ The Early Bronze Age 29
  ◦ The continued importance of caves 30
  ◦ Marine resources and outside influences 31
• The Late and Final Bronze Age. New strategies in land occupation 33
  ◦ Transition 33
  ◦ Large scale transformations 33
  ◦ The influence of the Urnfield culture 35
  ◦ The influence of the Eastern Mediterranean and the beginning of historical times 36
La Cova del Barranc de la Foradada (Xàbia)
(The cave of the Foradada ravine)
Josep A. Casabó i Bernad

• Introduction and prehistorical background

The cultural phases of La Cova del Barranc de la Foradada

Phase IV - 33,900 ± 310 BP
Phase III – the Aurignacian 26,110 ± 460 BP and 29,940 ± 150 BP
Phase II - (problematic)
Phase I – Chalcolithic

• Human fossil remains
• The extinction of the Neanderthals

The Cova del Barranc del Migdía
(The Cave of the Midday Ravine)
Research team: Marco Aurelio Esquembre, Juan de Dios Boronat, Consuelo Roca, Jorge Soler and Joaquim Bolufer.

• Discovery for archaeology and description
• The Cave Paintings
• The Burials
• Grave Goods
• Social Background
• Later occupations

The archaeology of Cap Prim – preliminary report on the excavation campaign of 2018
Joaquim Bolufer Marqués, Museu de Xàbia and Marco Aurelio Esquembre, Arpa Patrimonio

• Introduction
• 2018 excavation campaign
• Finds
• Preliminary inferences

BASIC BIBLIOGRAPHY

GLOSSARY
The prehistory of Xàbia and its surroundings

The first days of human occupation: prehistory

Rubén Cebrián Miralles

Introduction / summary

The current and most recent geological period is the Quaternary. It is associated with the appearance and expansion of human beings on earth and a phase of great climatic and biological change. Climate variability is seen in a succession of ice ages, the rise and fall of sea levels and changes in the ratio of wet and dry periods. These phenomena had a great impact on the evolution of humankind and its adaptation to different environments. Nowadays, the start of this period is placed at 2.6 million years ago. The first epoch of the Quaternary, the Pleistocene, was characterised by a series of different glacial and inter-glacial periods which correlated with the evolution of Palaeolithic hunter-gatherer societies. Climate fluctuations in the Mediterranean matched global changes, although they were marked mainly in the degree of humidity rather than temperature variations.

The next epoch, the Holocene, started some 10,000 years ago at the end of the last Würm glaciation. Changes in bioclimatic conditions were global, shown by increases in temperature and humidity. This altered the distribution of plants and animals which had developed during the previous glacial period and hunter-gatherer groups had to adapt their technology, economics and land-use strategies to the new situation. The human population consolidated all over the world at the beginning of the Holocene and modern flora and fauna developed. This coincided with the Neolithic expansion and the establishment of agriculture and animal husbandry as a subsistence system.

The Xàbia plain was directly affected by shoreline movements throughout the Holocene, with flooding of much of the coastal plain and human settlements from earlier times. This influenced the adaptation of communities in the current coastal zone and the accommodation of their habitat to the environmental changes that defined the last millennia.

History of investigation – Earlier studies

The first strictly archaeological references to the prehistory of Xàbia and its surroundings date from the second half of the 19th century by Juan Vilanova i Piera (1821-1893). He carried out surveys of numerous Valencian caves from his perspective as a geologist. Among those he visited was the Cova del Moro or Cova Negra (?), in the area of Poble Nou de Benitatxell, where he saw signs of prehistoric occupation, finding "... flint and other tools of prehistoric human industry". Unfortunately, his work was not continued and the site was largely destroyed.
The end of the nineteenth century saw a time of cultural flowering linked to the Renaissance movement. In 1879, the “Lo Rat Penat” was founded with a prominent History and Archaeology Section. This held conferences and published papers as well as organising excursions to different places of interest in the region, notably those involving “jocs florals” or flower games. Some examples concerning the Marina Alta and the area of Xàbia are:


- Roc Chabás, articles in the magazine *El Archivo* (1886-1893); *History of Denia* (1876).

- Theodoro Llorente, *Valencia. Its monuments and arts. Its Nature and its History* (1889-1890), Within which there is a chapter in which he talks about Xàbia and its history.

**Early 20th Century**

Early in the 20th century there are reports of a journey through the Iberian Peninsula by Abbot Breuil and Obermaier (1914). They visited a series of caves in the area from Dénia and Xàbia, although there are no references to the Cova del Montgó. They referenced the Cova de les Calaveres (Benidoleig), the Cova Fosca and Cova del Corb (Ondara), the Cova de l’Aigua, Bonarmini (probably the Bolumini cave in Beniarbeig), the Cova de Elies and Benimaquia point to Montgó, and the Cova de les Cendres in Moraira, where they collected ceramics that were deposited in the Musée de l’Homme (“Museum of Man”) in Paris.

The first report of the Cova del Montgó was by Segarra Llamas, referring to the extraordinary finding of a stone axe by some children in 1919. The same author refers to a 1929 survey of the cave carried out by Senent Ibáñez, associated with the Provincial Museum of Alicante, informing the relevant authorities that this was a site of great interest: "... the excavations that could be realised acquire great importance because of the abundance of ceramics with incised and relief decorations" (Minutes of the provincial Commission of Monuments p. 57, paragraph 7).

Senent also collected prehistoric pottery from Cap Prim, (Cap de Sant Martí) and the island of Portitxol, where he found vestiges of ancient buildings. He sent a report about the latter site to the General Commissioner of Excavations, which authorised an excavation along with that of the Islet of Campello, although the Xàbia site was never excavated.

In 1919 there were reports concerning remains in the Cap Prim, island of Portitxol area in an article by Remigio Salomón (who at that time was the Dénia judge), in the newspaper *El tiempo de Alicante: El Cabo de San Martín* (30- 12-1919). However, it does not specify the types of materials found there.

The *General Geography of the Kingdom of Valencia* was published in 1920, in which Figueras Pacheco (1880-1960) took over the volume dedicated to the province of Alicante. In the chapter focused on the Partido Judicial de Denia (Judicial Area of Denia) (Denia, Jávea, Benitatchell and Teulada), references to archaeological finds in the municipality of Xàbia are included in the section...
dedicated to historical notes. Within the chapter on caving, he particularly mentions various caves in the Montgó and Cap de Sant Antoni, highlighting the "southern cavern of Montgó, home of primitive man".

In the 1930’s the first "excavation" of the Cova del Montgó was carried out by Father Belda (1935-1936), director of the Provincial Museum of Alicante (where the material collected was deposited). However he never published. In 1935, a review was published in the Alicante journal El Luchador, Archaeology of Alicante. The campaniform (bell beaker) vessel in our province. Two very interesting incised ceramic fragments (7-12-1935).

The first publications dedicated specifically to the study of archaeology in the Xàbia area date from the 1940s

- 1944: Archaeological sites of Jávea. Review and catalogue of objects found there, by Juan Bover, in which he describes the main archaeological sites known in the municipality of Xàbia.

- 1945: Archaeological panorama of Jávea and its surroundings, by F. Figueras Pacheco. This work covers almost the same sites as those described by Bover, although there is some additional information, such as recent findings of Bell Beaker pottery in the Cueva de la Magdalena (Cova del Montgó) though it does not mention the work of Father Belda in that cave.

- 1947: The island of Portichol (Jávea), communication to the 1st Congress of the Spanish Levante by Segarra Llamas, in which he documents his visit to the island, where he found numerous fragments of ancient pottery scattered around.

- 1949: Figueras Pacheco wrote an article on the Cueva de la Magdalena (Cova del Montgó), published in the "Annals of the Centre of Valencian Culture", in which he cites research and reports about the site.

- There are several reports by Father Belda about the Cova del Montgó in the Memoirs of the Provincial Archaeological Museum of Alicante in 1943-1944 and 1945.

- Nicolau Primitiu cites various activities and visits of some of its members to sites in the Marina Alta in the 1930s and ‘40s (Anthropology and Prehistory Section of the Valencian Centre of Culture)

1950s and ‘60s

The 1950’s and 60’s were less fruitful in terms of research and publications concerning prehistoric archaeology in the area, among which the following can be noted:

- Various articles by Father Belda in the Noticias Arqueológico Hispánico in 1953 concerning Xàbia sites. The only one that mentions prehistoric materials is the Mouth of the River Gorgos (report 373, p. 188), where he refers to clandestine excavations, which collected: ... copper eneolithic (Copper Age) spatulas, neolithic type flint knives, three discoidal beads, some axes and ceramic vessels
decorated with punches and cardial (cockle shell) incisions. He indicated that some of the materials are in the Archaeological Museum of Alicante.

- Publication of the *Catalogue Guide of the Archaeological Museum of Alicante* by Lafuente Vidal in 1959, which includes the materials from collections made by Belda in the 1930s and which were viewed by Segarra Llamas. The inventory made in his 1985 publication follows the Lafuente inventory.

- In 1965 Ana Salvá presented an article at the National Congress of Archaeology in Valladolid: *Ceramic materials from the Cova del Montgó (Jávea) in the province of Alicante*, in which she reviews the ceramic materials from Father Belda’s excavations in the ‘30s which had been deposited in the Archaeological Museum of Alicante.

- In 1963 Tarradell excavated the Cova del Montgó, reporting only pottery from the Bronze Age. He presented a brief overview in the proceedings of the National Congress on Archaeology of Maó in 1967 within the communication: *News of the recent excavations of the Archaeology Laboratory of the University of Valencia*. While most of the ceramic material recovered by Tarradell is typologically Bronze Age, fragments of Neolithic ceramics are kept in the Museum of Prehistory of Valencia, such as one belonging to a “carenat” (carinated) vessel decorated with an sgraffito motif representing a sun. This appears in later publications by researchers such as Bernat Martí and Joan Bernabeu.

1970’s – present day

In the late ‘70s the Department of Ancient History of the University of Valencia carried out various field studies in the Marina Alta. In relation to our current area of interest, there were several reviews in the journal *Varia* in 1979 and 1983, concerning activities, particularly surveys in archaeological sites of the region. With respect to the municipality of Xàbia, the Cova del Montgó is cited, in which a series of surveys resulted in the recovery of lithic materials that were linked to the upper Palaeolithic, as well as ceramics affiliated with the Neolithic; the Cap de Sant Martí, the Isla del Portitxol, the Alt del Rebadí (perhaps the Alt de las Capçades), Santa Llúcia, and the Cova del Cap Negre.

In 1977, B. Martí reviewed and catalogued materials from the Cova del Montgó stored in the Provincial Archaeological Museum of Alicante. An assessment and cultural implications of the material culture from the site were reflected in his doctoral thesis on the Valencian Neolithic period. He identifies three periods in the ceramic set: a first phase is defined by cardial decorations (a little late according to the author); another represents a set of ceramic vessels typical of the Valencian Bronze age, and in-between there is a series with decorations having complex cultural affiliations. Certain techniques and decorative motifs have interesting parallels with those of other areas, such as the incised and ribbed decorations of ceramics from the Montgó and Fosca (Ares del Maestrat) in both cases at lower cardial levels. He also points out parallels with Andalucian sites such as Carihuela and Murciélagos and even with some Gibraltarian caves, in one of which there was a fragment of a body and lip of a vessel with a tubular handle and ribbed decoration. This is
identical to that from the Montgó. He also reflects on the stylistic similarities between the painted ceramics of the Cova del Montgó and those of the Cueva de los Tiestos in Jumella (Murcia).

A period of archaeological research in the region began in the 1980s with a whole series of activities both at the surveying level (largely driven by the regional museums of Xàbia and Dénia), as well as excavation (although most are rescue operations). The task of dissemination is of great importance whether it is in synthesis works like Segarra Llamas 1985, Jávea its origins and its history, (the first chapters of which cover the main sites of the prehistory of Xàbia) or in collective works involving leading specialists linked to the prehistory of the Valencian region. Special mention goes to the outstanding role played by the journal Xàbiga published since 1986 by the Soler Blasco Archaeological and Ethnographic Museum of Xàbia.

From the beginning of the 80’s the revision carried out by J. Bernabeu of material from the Cova del Montgó (in particular ceramics) together with other collections, such as that from the Cova de les Cendres (Teulada-Moraira) defined the Neolithic sequence at that time.

The ancient Neolithic was marked by the predominance of imprinted ceramics with a clear predominance of cardial decorations; the Middle Neolithic, with a diversification of decorative techniques: incised, incised-imprinted, ribbed, embossed decorations and the late Neolithic, represented by smooth ceramics, ceramics with sgraffito decoration and painted ceramics, these having parallels with the late Andalucian Neolithic.

The appearance of the journal Aguait in 1988 was also of great importance in disseminating the history, archaeology and prehistory of the Marina Alta. This was edited by the Institute of Regional Studies of the Marina Alta, a body with great cultural dynamism that regularly organises congresses with a regional, national and even international impact. A key milestone in understanding the prehistory of the area is the 1997 publication of issue 13-14 of the journal, a monograph dedicated to the prehistory of the Montgó and its surroundings. It has a multidisciplinary viewpoint, ranging from the physical environment (P. Fumanal), palaeobotanical aspects (E. Badal) to more specific studies such as the predatory societies of Montgó (J. Casabó), the funerary phenomenon (J. Soler Díaz) and cave art in the Montgó (J. Casabó), as well as reviews of the great cultural periods of prehistory with articles referring to the Upper Palaeolithic (V. Villaverde), Neolithic (J. Bernabeu) and Bronze Age (JL Simón).
Hunter-Gatherer societies

The first phases of human settlement

*Early Palaeolithic - before Homo sapiens*

There is little tangible evidence on the **material culture** from this period, not only in our area but also the whole of the Valencian region. We know nothing with certainty about the early stages of the **Palaeolithic** when the population consisted of small, highly mobile groups. If one considers datings from the lower, earlier levels of the Cova del Bolomor (Tavernes de la Valldigna) from about 350,000 years ago, the inhabitants of this cave in the La Safor region must have travelled the north of the Marina Alta using the coastal corridor. The two areas have the same geographical environment and are only 30 kilometres apart. Groups of humans would have used natural corridors as territorial connections to find different environments containing abundant and varied resources. Settlements in the mid-Pleistocene (both in caves and outdoors) were occupied in a sporadic and short-lived manner, in keeping with the opportunistic strategies of these hunter-gatherer bands.

A recent discovery of archaeological materials on the surface in the Barranquilla de Beniaia (Vall d'Alcalà, Marina Alta) provides possible evidence of an early Palaeolithic **sequence**. These materials consist of several worked pebbles and two pieces with indications of carving on both sides. This work is characteristic of the Lower Palaeolithic and, if confirmed, would be evidence of one of the earliest occupations of the Valencian region by human beings (Faus, 1996). Recent discoveries made in the Alto de las Picarazas (Andilla, Serrans) should also be highlighted. This site is being excavated and studied (M. Vicente et al, 2015) and evidence of human industry, and abundant remains of fauna characteristic of the Lower Pleistocene (1.5 million years ago), has been found there.

Another aspect that characterises the Lower Palaeolithic (350,000 to 150,000 years ago, the time of European **Homo erectus**) is the low technological level. These groups of humans harvested wild fruit, hunted herbivores and most likely scavenged the corpses of animals killed by carnivores. Some animal remains found in the lower levels of the Cova del Bolomor are **auroch**, horse, rhinoceros, hippopotamus, elephant, goat, wild boar, various species of deer and, among the carnivores, hyena and fox. An extensive range of fauna was exploited without specialised hunting strategies (which are not documented in the archaeological record until the later stages of the Upper Palaeolithic). Tools made of flint, quartzite or limestone are practically the only evidence of everyday life that have endured to this day. Other materials such as wood and various plant and animal fibres would also have been used, these have clearly not been preserved. The raw material needed to make stone tools came from different supply points. The limestone used mainly to make the largest pieces was obtained near the site, while the scarcer, precious flint was sought further afield, perhaps acquired during group travel. These tools (toothed scrapers) have little morphological variation, were often little re-touched, only having been chipped with simple gestures to finalise the blade. They were put to various uses, such as working wood and skin or for cutting meat and were multifunctional instruments, authentic multi-purpose tools.
The Middle Palaeolithic - The Mousterian

These unspecialised maintenance tools, which were quickly made and short-lived, were used throughout the Middle Palaeolithic (150,000 to 35,000 years ago); the time of the Neanderthals. This was a period of continuity in the human evolutionary process, with a consistent and stable material culture. The general theme in the development of Middle and Upper Pleistocene societies is homogeneity and stability, without complex cultural changes. The differences between industrial complexes in various archaeological sites of the same period may be explained by divergent technological adaptations to different environments. Nevertheless, (and not forgetting regional peculiarities) there was an evolution in knapping techniques throughout the Middle Palaeolithic. In general, the industry is characterised by previously preparing the stone core to obtain flakes with more regular, predefined shapes as well as sharper cut angles (Prepared core or Levallois technique). There is some predetermination in the final shape of the objects that result. Edge retouching gives rise to new technical improvements, for example: scraping without cutting, or getting reinforced edges for cutting hard materials. The refinement of flake tools gradually led to the disappearance of those made with the core of the flint nodules. There was, therefore, better exploitation of the raw material with a tendency to obtain smaller pieces linked to greater use of the flint. Traditionally, these simple, poorly standardised sets of instruments are called the Mousterian industries, a term that has served to define the Middle European Palaeolithic culture.

Assessment of the economic and social organisation of humans in the early Pleistocene is based on aspects such as the distribution, frequenting and internal configuration of settlements (The latter requires extensive excavation of the archaeological sites). Despite the paucity of information, sites such as the Cova Negra (Xàtiva) and the Cova Beneito (Muro de Alcoy) show signs of a particular spatial arrangement, where fire is the domestic focus. The control and maintenance of fire were perfected amongst Neanderthals, though in many cases the hearths were simple and without special preparation of the ground. A controlled fire brought protection from darkness, climate and predators, as well as facilitating the distribution of tasks and communication between group members. This made possible an increase in the social complexity of human groups. Hence, elements of symbolic expression such as personal adornment and funeral practices appeared. An example of the latter is the evidence of child burials in the Cova Negra.

Another key element in current studies on livelihoods is “use-wear” analysis of animal bones and tools. Bands of humans took advantage of a wide range of resources. Their food was mainly based on deer and wild goats, the two most abundant herbivores in our area, and their diet was complemented by hunting other small game mammals, especially rabbits. The earlier practice of exploiting carrion killed by large carnivores cannot be ruled out.

With regard to the location and distribution of settlements in the area, there are large caves with good conditions for habitation (Cova Negra; Cova Beneito; Cova de la Pextina in Bellús; Cova Foradada in Oliva; Salt in Alcoy) and small caves or rock shelters – abríc (abric del Barranc de Carcal in Buñol; the Quebrada in Xelva). The model describes a more or less permanent central place where the majority of daily activities were carried out and other outlying camps with short-term, sporadic and seasonal stays dedicated to a single activity such as hunting, butchering and supply of raw materials.
This period must be linked (taking into account the lack of variety in materials and stratigraphic references) with sites in the Marina Alta such as the Cova del Corb in the Sierra de Segària. There is more doubt about the Cova de les Calaveres in Benidoleig. The materials recovered here are more typical of Upper Palaeolithic industries, however, the ideal habitability of the cave means that occupation during this earlier period can be presumed. Focusing on the Xàbia area, reports refer to possible Mousterian materials in the Coveta Fumanal (on the north face of the Cap de San Antoni), and near the Cova Foradada, where materials possibly from the same timeline are also noted. The confirmation of these data would reinforce the idea that Neanderthal groups chose their settlements in places where they could make use of varied resources at the boundary between different habitats. Thus, marine and coastal corridor resources could be exploited (the latter being a passage for herds of herbivores) as well as the hunting possibilities offered by the Montgó massif.

Diagram of coastline 30,000 years BP in comparison with present day
Illustrating the coastal plain.
Image from public presentation of Quaderns Vol 3 by Rubén Cebrián Miralles January 2020
The beginnings of the Upper Palaeolithic: the arrival of *Homo sapiens*

*The last Neanderthals*

The archaeological record between 40,000 and 35,000 years BCE shows a series of changes when compared with the previous period. A new human type, *Homo sapiens*, arrived in Europe from Africa via the Middle East. This arrival is associated with differences in aspects such as settlement patterns, instruments, forms of production as well as social and ideological expression. The causes and manner in which these changes occurred, as well as the role that the last groups of Neanderthals played in the process, are one of the main topics of discussion today. However, the Middle Palaeolithic culture seems to have endured along the central and southern Mediterranean coast of the Iberian peninsula.

Various Valencian (Cova Negra, Cova Beneito) and Andalucian sites (Carihuela, Granada; Boquete de Zafarraya, Málaga) contain remains of Neanderthals. Yet datings reveal that these are contemporary or even later than early Upper Palaeolithic industries in other areas of the peninsula. This indicates how well adapted Neanderthals were to this area and the cohesion of their population structure. However, the research is limited because there are few sites with overlapping archaeological levels from these two periods (Cova Beneito).

The Neanderthal Genome Project, which was recently released worldwide, has provided new data on the DNA of this species. The results show that European and Asian populations of people today share between 1% and 4% of their genes with Neanderthals. This confirmation of hybridisation between modern humans of African origin and Eurasian Neanderthals endorses the theory of genetic assimilation of Neanderthals into *Homo sapiens* as opposed to the classic view of the substitution of one group by another.

*The Upper Palaeolithic in the Marina Alta*

Although there is a lack of data referring to the earlier period, there is, in general, more information about the Upper Palaeolithic in the Marina Alta. The data provided by two sites in the coastal area namely the Cova Foradada (Xàbia) and the Cova de les Cendres (Punta de Moraira), enable (with some discontinuity) completion of the entire sequence of this period:

- The Cova Foradada for the first period (*Aurignacian*, in traditional prehistoric terminology) about 30,000 - 25,000 years ago.

- The Cova de les Cendres for the middle and final phases (*Gravettian, Solutrean* and *Magdalenian*), between 25,000 and 10,000 years ago.

The Cova del Moro, in the Poble Nou de Benitatxell, might also include a long sequence within the Upper Palaeolithic, although as the materials were recovered from surface collections, it is difficult to attribute them to a particular chronology or to a specific cultural sphere.
The richest and most verified information is from the Cova del Comte (Pedreguer), a site where excavation campaigns starting in 2011 made important discoveries of Palaeolithic rock art. Most of the information studied so far comes from a bay excavated in the deepest chamber where the art was found. The dating and materials are associated with the Gravettian (Casabó et al., 2017) and up to twenty panels with engraved zoomorphic motifs and shapes have been documented, linked stylistically to pre-Magdalenian art. Horses are the most prevalent animals and spirals the most frequent shapes. The closest parallels can be found in a set of decorated stone plates from the Cova del Parpalló and the image of a horse in the Cova de les Meravelles, both in Gandia (Casabó et al, 2018). Various painted motifs and plates with engraved zoomorphic designs have also been found on portable art.

Ten excavation campaigns have been carried out in the Cova Foradada since its discovery in 1992. (Casabó, 1997b, 2004). Apart from the remains of Homo sapiens sapiens, the importance of the site is due to several factors. On the one hand, it fills a particular void in research, since recorded sites from the early Upper Palaeolithic are scarce at the regional level. The site's link with the beginning of the Upper Palaeolithic is based on characteristics of the stone tools and animal remains. The lithic industry from the lower Pleistocene levels, where there are laminar media (scrapers and blades), diverges from that of the Middle Palaeolithic Mousterian industries, which are mostly made of lithic flakes (side scrapers). In terms of wildlife, there are deer, horse and auroch, as well as leopard and donkey, these two latter species being characteristic of the early Upper Palaeolithic. Diversity in the range of animals is thus seen, contrasting with that later in the region's Palaeolithic sequence when there was greater specialisation. Parallels can be found regionally in sites such as the Cova de les Mallaetes (Barx) and the Cova Beneito, and widely in the Mediterranean area.

**The environment and subsistence of Cromagnon man**

The Cova Foradada gives clues to the environment and livelihoods of the first anatomically modern human beings (Cromagnon man). The study of wildlife remains shows diversity in the species captured which, as in previous periods, implies high mobility. However, there is an increase in smaller prey in the diet, such as rabbits and molluscs, unlike the norm in the Middle Palaeolithic, when medium and large species predominated.

The significant number of fire structures (hearths), seems to indicate a sporadic and recurrent occupation of the cave, related to the high mobility of the groups at that time. The Cova Foradada is a privileged place to learn about the adaptation of hunting communities to the environment and their strategies for gathering resources. The configuration of the coastline between Cap de Sant Antoni and Punta de Moraira during the Pleistocene must be taken into account. It was not where it is nowadays, but at some kilometres further out, forming a coastal plain, a place of passage for herbivore herds. In reconstructing the coastal area for the times when the Cova Foradada was occupied at the beginning of the Upper Palaeolithic, there is an area where this coastal plain narrows just in front of the Cap de Sant Antoni, an advantageous location for groups of hunters to corner their prey. The Cova Foradada can, therefore, be understood as a strategic point for hunting and seafood gathering.
With the partial data available, it is difficult to determine the population density when anatomically modern man became established. Information comes almost exclusively from caves and rock shelters. Any open-air settlements are now hidden beneath the sedimentary layers of valley floors, so it is difficult to assess the extent of a possible population increase during this period. It seems that human groups had a simple model to exploit the environment which was not much different from the previous period. Hunting was not aimed at a particular species, but attempts were made to make use of resources from different areas.

**A seasonal pattern of occupation – Upper Palaeolithic - The Gravettian**

The distribution patterns of settlements in the area, between 25,000 and 21,000 years ago (the Gravettian period in traditional archaeological classification), provide evidence of logistics associated with seasonal routes and the use of specialised sites. There is a series of caves and shelters in the central and southern regions of Valencia that fit into this scheme: the Coves de les Mallaetes and Meravelles (Gandia), Barranc Blanc (Rótova), Cova dels Porcs (Real de Gandia), Cova Beneito (Muro de Comtat), the rock shelter (abric) de la Ratlla del Bubo (Crevillent), Cova del Sol (Asp) and the Cova de les Cendres (Teulada). These are distinct locations which give easy access to different resources.

The model is seasonal, prioritising coming together in strategic areas which have large resources in one season and dispersal in search of other, scarcer resources during another. Studies of the fauna recovered from archaeological sites indicate a greater variety of species collected when compared with previous phases, and suggest wide-ranging group movements.

The most substantial and valuable information regarding our area originates from the Cova de les Cendres which is located on the north face of the Punta de Moraira (Moraira point) located at the southern end of the coastal arc between the Cap de Sant Antoni and Punta de Moraira. Known since the beginning of the 20th century, it is one of the most important sites in the entire Mediterranean, having a sequence ranging from the Upper Palaeolithic to the Bronze Age, and is fundamental for determining the Neolithic sequence at the regional level.

In Cendres, as in the Cova Foradada, it has been possible to study the influence of sea-level variation during Quaternary climate changes on living space for prehistoric humans and the impact on occupation and land use. Occupation of the area by modern man during this period was strengthened with broad supra-regional social networks and periods of large-scale movements of people. It is not an accident that the first examples of portable art in the Cova del Parpalló are linked to these times. The archaeological documentation of the entire Mediterranean Peninsular homogenises. In general, the material culture is fairly uniform throughout the area (scrapers, burins, backed edge blades, Gravettian tips, Cendres-type tips). That is, it consists of pieces which are characterised by the use of abrupt retouching which destroys a cutting edge. One notable aspect of materials coming from the Cova de les Cendres is the significant increase in work on bone, which was traditionally considered to be later (Villaverde and Román. 2003, 2004).

**Regionalisation – Upper Palaeolithic - The Solutrean**

This material culture was the basis for the subsequent regionalisation of the Solutrean period (between 21,000 and 16,000 years ago). This period is characterised technologically (in terms of the
by the use of **pressure flaking** and **reduction percussion**, creating tools such as laurel-leaf shaped blades, points having shanks and fins as well as low cut points (shank on one side) at later periods in the sequence. The climatic conditions during this period were very hard; tree species gave way to an open landscape. Continuing the earlier trend, the network of movement and social relations was expanded to enhance group survival. Raw materials circulated over long distances and we find products from the coast inland. There is an investment of effort in the manufacture of tools and new weapons. Many caves were still occupied during this period: Mallaetes, Parpalló, Barranc Blanc, Meravelles, Cova del Porc, all in the la Safor region. Hunting strategies continued to follow earlier trends, with a herd tracking system combined with ambush sites and control of natural corridors. Some evidence of this period in our area is a flat-faced tip from the Peña Roja (Llíber) and a laurel-leaf point from the Cova del Moro (Poble Nou de Benitatxell).

The latter site is in a precarious state of conservation due to changes it suffered at the end of the 19th century owing to sediment extraction for constructing terraces, but especially as a consequence of uncontrolled clandestine activities which destroyed much of the site in 2002. The materials which have been collected there are distributed between the Xàbia Museum and the National Archaeological Museum. Studies carried out on the stone tool industry refer to later contexts of the Palaeolithic sequence (Castaño et al 2008)

The presence of a laurel-leaf blade among the lithic material, tallies with a Solutrean occupation of the cave, possibly at the middle or end of this period. This is a time when there is a large concentration of sites in central areas of the Valencian region e.g. Malladetes (Barx), Barranc Blanc (Rótova), Parpalló (Gandia, mentioned above) as well as the Cova Beneito (Muro de Alcoy) and Cendres (Teulada). One cannot rule out a possible relationship between the Cova del Moro and the Cova de les Cendres during this period, as the two sites are close to each other.

During the deepest cold of the **Würm** glaciation, the European population was concentrated in the south of France and the Iberian Peninsula. At that time, the Pleniglacial, the coastline was about 15 kilometres from where it is at present. This provided a continental rather than a coastal character to the site. Materials ascribed to the Solutrean have been found in the aforementioned Cova de les Cendres (with datings of 19,500-18,000 BCE) and in the Cova de les Calaveres in Benidoleig. It should be noted, however, that the Cova del Moro was more or less continually occupied in other periods of the Upper Palaeolithic. Future interventions at the site could clarify if there were a Solutrean occupation.

In many cases, the remains of wildlife carry man-made cut marks and intentional fractures. There is a predominance of goat and deer, together with a significant complement of rabbits in the diet. The presence of other species, such as horse and lynx, forms a characteristic sample of the assemblage of wildlife in the Mediterranean region of the late Upper Palaeolithic.

Various materials have been collected from the Cova del Montgò, but these are without stratigraphic context. There is not much which is definite except for some pieces characteristic of the end of the Solutrean such as low-cut points (shank and shoulder on one side). Other lithic materials from selective collections made in the 1970’s were deposited in the Museum collection of Gata de Gorgos. These were scrapers, denticulates (toothed scrapers), reversed blades (with retouch on their backs), burins (scrapers with a steeply notched cutting edge) and “truncaduras” (truncated ends) amongst others. Additionally materials from the bone industry such as fragments of assegais.
(javelins) and a possible punch made of antler. According to Josep Casabó, these indicate that the cave would have been occupied during the Magdalenian or final phase of the Solutrean (though one must always be cautious, bearing in mind the way the materials were collected). Between 1978 and 1980, the Department of Ancient History of the University of Valencia and the Prehistoric Research Service of Valencia carried out several surveys and excavation campaigns directed by J. Aparicio to put the aforementioned findings into context. Trenches dug in the cave provided various materials from a bone and lithic industry that could be related to the Magdalenian period (burins, scrapers and the base of a bevelled assegai).

*Cova de les Cendres (The cave of ashes) Teulada
Photo Christine Betterton-Jones*
Specialist hunters – The last phases of the Palaeolithic

The Magdalenian

There is more information about this phase, which is culturally called the Magdalenian and which corresponds climatically to the Late Glacial Interstadial (the period after the glacial maximum and before the Holocene). There are more references to archaeological sites which can be linked to these times (between 16,000 and 10,000 years ago): the Cova de les Cendres (Teulada), the Cova del Montgó (Xàbia), the Cova de l’Alqueria de Ferrando (Dénia) on the southern slope of the Montgó, as well as other sites near Xàbia such as the Cova de les Calaveres (Benidoleig), the Cova Bolumini (Beniarbeig), the rock shelter (abric) de Segària (Ondara), the Cova del Randero and the Coveta de la Penya del Cingle (Pedreguer), the abric del Tossal de la Roca (Vall d’Alcalà), the Cova Fosca and the Cova del Reinós (la Vall d’Ebo) and the Cova del Barranc de l’Infern (Vall de Laguar).

However, it is sometimes difficult to differentiate between sets of materials from the late Palaeolithic and the next period, the Epipaleolithic, especially if they are from surface collections and not from systematic excavations.

The most important sites excavated recently using scientific methods are the Cova de les Cendres (Villaverde et al, 1997) and the Tossal de la Roca in the Vall d’Alcalá (Alcalá Valley) (Cacho et al. 1995, 2001). The Cova Fosca and the Cova del Reinós are of great importance as they house examples of Palaeolithic wall art, which together with that recently found in the Cova del Comte in Pedreguer enrich the heritage of local Palaeolithic art. Unfortunately, it is difficult to ascribe a culture or chronology to other sites because of the absence of reliable stratigraphic references at best (when some type of excavation has been carried out) or not knowing the origin of materials recovered on the surface or through clandestine excavations. The Cendres and Tossal de la Roca excavations are part of an interdisciplinary study trying to draw a picture of the end of the ice age in the central Mediterranean and the economic activity of Upper Palaeolithic (Magdalenian) groups.

At a technological level, improvement in manufacturing methods and even more standardised lithic tooling is observed. One of the main advances is the appearance of very small tools, the microliths, which are characteristic of the later Epipalaeolithic period.

Microliths are small flint flakes, only a few millimetres wide and less than two centimetres long, which, once modified by retouching, were inserted in wooden or horn spears creating what are called composite tools. These innovations resulted in more regular, efficient pieces, tailored to new hunting techniques.

Also, highly specialised tools are found, which are adapted to work on bone and wood (burins) and skin (scrapers) and others. Further raw materials were incorporated in the manufacture of tools, such as deer horns which were used to make javelins and harpoons attached to wooden shafts. The widespread use of sometimes decorated bone tools (punches, sewing needles) is seen, indicating an increase in social complexity.
The archaeological record confirms a change in economic strategies when compared with previous times. The animal bone remains found in Cendres are basically deer and rabbit. People exploited the deer completely; meat, bone marrow, skin, tendons to make ropes, horns to make weapons and other useful things. Teeth (in particular the canines) were used as ornaments. There was planned, selective hunting of young animals (about three years old), carried out at certain times of the year, probably in the autumn and winter.

In contrast, in the Tossal de la Roca the most important animal is the wild goat, which was used intensively. This is supplemented by rabbits, as in the case of Cendres. Goats are perfectly adapted to the ecological conditions of inland mountain ranges where the Tossal de la Roca is located. Hence, one can establish complementary relationships between the two sites which are about thirty kilometres apart through the Gorgos river corridor. Seasonal camps were set up to follow short-distance mammalian migrations at various times of the year, while also exploiting fruit and other plant resources.

It should be noted that this distribution pattern, with sites on elevations near the coastal plain connected by a river corridor to others in mountainous areas inland, repeats along the Mediterranean zone of the peninsula.

As a result of this phenomenon, models of land use changed. Groups of humans switched from being highly mobile to become more controlled, with short-term, planned, seasonal movements. They occupied a smaller area, moving shorter distances channelled between the coast and the interior. This is indicative of a greater social connection between hunter groups optimising resources to promote group survival.

### Palaeolithic art in the region

Perhaps this "regionalisation" in the dynamics and economic foundations of the population is reflected in data from recently identified sites in the Valencian region containing Palaeolithic wall art. Until 1983, only two sites were known to have such art: the Cova Fosca and the Cova del Reinós, both in the Ebo Valley. Today, there are fourteen assemblages attributed to the Palaeolithic or late Palaeolithic, of which six are found in the central regions: the Parpalló and Meravelles caves in Gandía, the Cova del Comte in Pedreguer, the Cova Bolumini in Beniarbeig and the two known sites in the Ebo valley. The last four are all in the Marina Alta region. The six sites in the central regions are in an area which has one of the highest concentrations of evidence for the Upper Palaeolithic in the Iberian Peninsula. This confirms not only that settlement existed, but that it continued throughout much of the Upper Palaeolithic sequence (Villaverde, 2018).

Artistic evidence can, therefore, be linked to the habitat, making the artistic phenomenon markedly territorial. There is a chronological evolution in the instances of parietal (wall) art, based on several fundamentally stylistic criteria. These take as a reference point the portable art on an important collection of plates from the Cova Parpalló. Villaverde proposes a pre-Magdalenian chronology for Meravelles, Comte, the figure of the deer engraved on one of the inner walls of la Cova del Reinós and a figure from Parpalló. Some of the Cova del Parpalló's images could relate to Magdalenian times like those of the Cova Fosca (where up to seventeen zoomorphic images have been recorded), although this site has problems with interpretation. The painted motif in the Cova Bolumini cannot be attributed to any particular period. The characteristics of pre-Magdalenian art (from Gravettian and Solutrean times) indicate important relationships with the rest of the Iberian Peninsula, while
during the Magdalenian the process of regionalisation is also seen in art. This is displayed in the antiquity of styles and technical features.

These new discoveries of Palaeolithic art in the Valencian region fill a void that had been difficult to explain in the face of the large amount of information on the material culture. The similarity in artistic styles and tool industries with sites in Murcia and Andalucia suggest a common cultural tradition that stretches from Tarragona to the south of Portugal. This constitutes an Upper Palaeolithic Iberian *facies* (cultural practice) which had extensive networks connecting regions and groups throughout the period (Villaverde 2018). The art reflects complex thinking on the part of these hunter groups. There is strong symbolism (animal figures are usually located in the innermost parts of the cavities) that has much to do with important aspects of their beliefs.

Apart from the motifs of parietal (wall) art, there are many examples of portable art, made on various media: bone (Cendres, Tossal de la Roca), stone plates (Tossal de la Roca, Cova del Barranc del Infern, Cova del Comte or the famous plates of the Cova del Parpalló), representing the same figurative and geometric motifs that are found in the parietal art. A proliferation of examples of personal ornament is also seen, such as perforated mollusc shells and pierced canine teeth of deer which form part of a whole paraphernalia of visual communication signs.

Wall art in the Cova del Comte
from Quaderns del Museu de Xàbia Vol 3 Page 51 – Photo Museu de Xàbia
The Last Hunters - The Epipalaeolithic

The beginning of the Holocene

About 10,000 years ago, there was a change in climatic and environmental conditions which heralded the transition between the last cold episodes of the Pleistocene and the beginning of the warmer and wetter Holocene (which we are currently in). This transitional period, known as the Epipalaeolithic (or Mesolithic) is the scenario for the development of the last Palaeolithic hunter-gatherer societies. Two important environmental changes had great impacts on the coast of the Marina Alta and its human population: firstly, there was a rapid rise in seawater levels, flooding wide areas of flat shoreline (although there was less impact on elevated coastal areas), and secondly, there was a gradual expansion of temperate forests, especially oak forests. It is generally accepted that during these times communities continued to follow the Magdalenian traditions of the late Upper Palaeolithic, but adapted to the new ecological conditions of the Holocene. This is reflected in aspects such as the rise of microlithism (use of very small flint flakes as tools) perhaps due to the smaller size of prey, and the decline in the bone industry. It is more difficult to determine the evolutionary dynamics of the last hunter-gatherers, and their progressive socio-cultural complexity, due to the rapid replacement of their way of life by the first farmers who appeared about 8,000 years ago.

The archaeological evidence in the Valencian region centres on two large groups of sites: one to the north (Els Ports and the Maestrat) and the other to the south (La Safor, l'Alcoià-Comtat and the Marina Alta). These are mountainous areas, with a complex orography and ranges that extend to reach a wide coastal plain, as is the case for the mountains which span northern Alicante and southern Valencia provinces. The main archaeological sites in this area are linked mostly by river corridors that connect important inland mountain sites with the coastal zone. From north to south there are:

- The Serpis or Alcoy river. The settlements here are located both at the head (abric de la Falguera, Alcoy), and in ravines that separate them from other river courses such as the Gallinera (Cova d'en Pardo, Planes).

- Further south is the Girona-Ebo river, upstream of which is the Tossal (hill) de la Roca.

- In the southernmost part of this river basin is the Gorgos river where the Coves de Santa Maira (Castell de Castells) are located.

There are also sites in coastal areas such as the Collao in Oliva.

Land occupation appears to have been strategic, with pre-defined criteria for choosing where to settle. The groups lost mobility and intensively exploited resources around the site. Settlements were connected through corridors perpendicular to the coast, where the archaeological sites show preferred location areas.

These relationships between the coast and the interior can be traced at some sites around Xàbia (Casabó, 1992). Archaeological remains exist on the coast such as the open-air settlement of Cabo de la Nau. The materials recovered on the surface here are fairly homogeneous, microlithic in type: burins, small scrapers, some geometric (trapezoid). The general features of the materials show characteristics which straddle the micro-laminar and geometric industrial complexes. This was
probably a coastal settlement which used marine resources (in the context of a late timeline with a coastline similar to the present day). Another open-air settlement is located on the Plana dels Molins. Several geometric microliths were found among materials collected on the surface. These are tools which are characteristic of the later phase of the Epipaleolithic. As in the previous case, this was most likely a camp dedicated to hunting small mammals and exploiting coastal resources.

The Cova Foradada also seems to have been occupied temporarily at this time, with the same type of function. Occupation of the Cova Mulet (Teulada) and the Pla de les Morres (Poble Nou de Benitatxell) can also be linked to these times. Various materials such the as remains of carving and flint which had not been re-touched have been located at the latter site, suggesting its use as a workshop area.

Another area where there is a concentration of sites is the zone between the coast and the inland mountains, such as the abric de Segària (Ondara), the Cova Bolumini (Beniarbeig), and the Cova Randero (Pedreguer). These are next to natural corridors controlling the thoroughfare. The interior sites are at the headwaters of the Gorgos and Girona rivers, for example, the Coves de Santa Maira and Tossal de la Roca. These were focused on the exploitation of forest resources. In this way, the topographical diversity enabled the combined use of all resources from the coastal plain to the inland mountains.

One of the best-studied sites of this period is the Coves de Santa Maira. Stratigraphic and Palaeoenvironmental analyses and the datings obtained have improved our understanding of how the last groups of hunter-gatherers in the Marina Alta lived (Aura et al., 2000). For example, it is known that they consumed acorns and other wild fruits, coinciding with the increase in species such as oak in those warming times; they also hunted deer but also wild boar, rabbits (a readily available dietary supplement), hedgehogs and foxes. One can also infer from marks made by carnivores on some of the bones, that the camps were occupied seasonally and left for considerable periods. It is also known that they moved to the coastal area, a few tens of kilometres along the Gorgos River because skeletal remains of coastal fish have been found, as well as mollusc shells used as pieces of ornament. The coast was an area of enormous interest to these groups, with coastal marshes having great logistical and economic value. It is possible that no more settlements have been documented because of the obstacles to conservation in this area including, but not limited to agricultural transformations, urban planning pressure and erosion.

In short, these groups had complex subsistence economies which diversified their livelihoods and made the most of their resources. The loss of wide-ranging mobility made an incipient sedentary lifestyle possible and favoured the storage of resources so that they could be consumed at a later date. New forms of social integration started because they no longer had to make long journeys. There were larger groups on more settled territories, increased regionalisation and new ceremonies (there is an example of multiple burials in Collao, in Oliva). This view contrasts with classical theories linking this period with cultural decline and poverty. In contrast, the archaeological record demonstrates the great ability of Epipaleolithic groups to adapt. The end of the evolution of the last post-glacial hunters was marked by a need for greater social and territorial cohesion in the face of the arrival of a new subsistence system based on the domestication of plants and animals. In interior sites such as Santa Maira where Neolithic materials are documented, there is total change with respect to earlier Epipaleolithic levels. The breaks accumulate and there is a marked rupture at stratigraphic, economic, material culture, demographic, symbolic and occupational levels coinciding with the first occupations of farmers and herdsmen.
Location of the Coves de Santa Maira,

Barranc de Famorca, Castell de Castells, Gorgos river water course.

Top: View from far side of the river. The entrance to the caves is the area in shadow to the right of the picture. Note: The steeply sloping “abric” (rock shelter) on the left houses some Neolithic macroschematic rock art.

Left: approaching the cave entrance from the south east.

Photos: Christine Betterton-Jones
Agricultural and livestock societies

The earliest village communities - 6th - 5th millennia BCE

The Neolithic

The introduction of agriculture and animal husbandry was a radical change from the livelihoods of hunting and gathering societies. Food production was changed through the domestication of various plant and animal species. Other new features of the Neolithic period were ceramics, stone polishing, a sedentary existence, and the beginning of a secure life in villages. Greater social cohesion developed, stimulated by the organisational needs of the agricultural cycle. All this led to a change in the evolution of history, of which we are part-heirs. Within the framework of the western Mediterranean arc, which includes the Valencian region, the processes that initiated, developed and consolidated the new producing economy took place between the 7th millennium and the 6th century BCE.

Dating methodology

This sequence is divided into several stages, which have been established from calibrated carbon dating (cal. BCE), which is used below in this account covering the Neolithic to the Bronze Age. This method provides conventional dates from radioactive carbon isotope decay (expressed in years BCE), adjusted with tree ring growth series (dendrochronology). This enables the archaeological evidence of past social groups to be ordered on a time scale compatible with our calendar.

The calibration or adjustment of the conventional C14 data is necessary because, contrary to assumptions made by inventors of the method, the amount of C14 in the atmosphere has not always been the same over time. They based their method on the basis that the radioactive isotopes of carbon (C12 and C14) have a more or less fixed proportion in the atmosphere and are absorbed by living things during their life cycles. When an organism dies, the amount of C14 fixed within it disintegrates at a constant rate, unlike that of C12, which remains unchanged. Thus, knowing the initial amount of C14, the proportion of C14 relative to the C12 (the stable carbon isotope) present in an organic matter sample could be used to calculate its age. The amount of C14 in the atmosphere, however, has undergone alterations due to changes in solar activity, climate fluctuations, variations in the Earth's magnetic field, and more recently, with the massive exploitation of coal and release into the atmosphere of large amounts of CO2 as a result of the Industrial Revolution and numerous nuclear explosions. Once the variability in the amount of atmospheric CO2 was recognised, the need to accurately determine these fluctuations was evident.

The introduction of agriculture

The first extensive use of wild cereals in the Mediterranean occurred in the Middle East, around 10,000 BCE. The first forms of domestic wheat appeared in Jericho in the 9th - 8th millennia while the first domesticated livestock was introduced on the shores of modern-day Syria and Palestine.
Ceramics appear in the archaeological record later, when the expansion process had already begun, a process which, in just over two thousand years, led to the agricultural colonisation of the European continent. The material culture of leading groups in this Mediterranean expansion from the Balkans to the coasts of Portugal had defining features. One is the decoration of their ceramics with imprints of different objects, the most characteristic one being the edge of a cockle shell *Cardium edule*. That is why this age, the first Neolithic, has come to be defined as the "cultural group of imprinted ceramics" (or impressed ware). With reservations, this could be considered the first "culture", or at least a cultural unit, having a Mediterranean scope.

The agricultural colonisation of the Mediterranean is explained today as the result of a twofold process:

1.- The progressive colonisation of new lands by groups of farmers and herdsman.

2.- The dissemination of information related to new Neolithic technologies among Epipaleolithic or Mesolithic groups. The archaeological record indicates that Mesolithic communities gradually assimilated Neolithic developments. This assimilation eventually led to the abandonment of traditional subsistence systems and their replacement by those based on agriculture and livestock. This is called the Dual Model (Bernabeu, 1996).

The high density of known archaeological sites along the Valencian coastal strip, including the regions of La Safor and the Marina Alta, indicates that this was as one of the receiving zones of the first inflows of the producing economy to the Iberian Peninsula. The maritime component is key in assessing the nature and origin of these first foreign contacts, as well as in understanding the longevity of some settlements by the sea.

During the Neolithic I (Ancient Neolithic or Cardial Neolithic) between the beginning of the 6th and the middle of the 5th millennium BCE, the Gorgos river valley, and by extension the Marina Alta, were part of this central zone between the Júcar river to the north and the Aitana mountain range to the south (the central Valencian “comarcas” or districts).

It is possible to identify at least four local groups in this area from the old archaeological horizon, approximately between 5,650 and 4,900 BCE.

- the group of the Penáguila valley and the upper and middle Serpis (the Mas d’Is outdoor settlement, in Penáguila; the Cova de l’Or in Beniarrés; and the Cova de la Sarsa in Bocairent)
- another group, in the Vall d’Albaida
- and two coastal groups, one in the lower Serpis and the other in the Marina Alta, separated by wide terrain and about 25 kilometres away from each other in a straight line (Bernabeu et al, 2006a).

**Macroschematic Rock Art**

The Marina Alta group was organised around the Gorgos river course, the longest river in the entire region and the one with the easiest communication with the interior area where the Penáguila /middle Serpis group was located. The high density of macro-schematic rock art by early farmers in the inland valleys of las Marinas could represent a link between the two groups. This pictorial style depicts large geometric figures and motifs in dark red, intended for viewing at a distance. The
location of the sanctuary of the Pla de Petracos on the threshold between the upper and middle reaches of the Gorgos river is a reflection of these connections.

Another question is: which group created these paintings? Traditionally there has been a tendency to evaluate macro-schematic art from an inland geographical perspective, in which the ensembles of La Sarga (Alcoy) and Petracos functioned as territorial markers for a particular local group. Perhaps the phenomenon should also be explored from a coastal point of view, at least given the proximity of Pla de Petracos to the coast. This relationship is even more evident in the case of different sets of macro-schematic art from the Barranc de l’Infern (“ravine of hell”) in the middle Girona river course, which has a clear link to coastal neolithic groups.

Despite being sedentary, Neolithic groups still had some mobility through short-distance transhumance (livestock migration), as well as group gatherings for cult ceremonies and the supply of exotic materials through exchange networks. All this suggests a mental appropriation of the landscape by early Neolithic bands; a common space that has been defined as "cardial territory". They found a place charged with symbolism in the mountains in the interior of the Marina Alta, where they represented their gods and expressed their beliefs. Its reflection can be seen in the aforementioned macro-schematic art made by these early farmers.

The precise chronology of this style of rock art has been determined through parallels of some motifs with others in cardial ceramic decoration typical of the first Neolithic period (Martí and Hernández, 1988, Bernabeu, 1989). With the data currently available, settlement during this first horizon must have been located in the area closest to the coast, mainly occupying cavities. The most important Xàbia site is the Cova del Montgó. This can be linked to the Cova de les Cendres (Punta de Moraira) and the Cova Bolumini (Beniarbeig, Girona valley). All three were occupied from earliest Neolithic times (associated with the cultural horizon of impressed ceramics) up until the early Bronze Age in the second millennium BCE.

**Seasonal use of marine resources**

It is important to point out the seasonal importance of the use of marine resources, which would likely have been the case of the Cova de l’Or in the Cap Negre (Xàbia). Materials linked to these early times have been found there, such as handmade ceramics and a fragment of a bangle or black stone bracelet which are typical of this phase.

This cave occupation might be linked to seasonal stays to take advantage of certain economic resources such as forestry, hunting and livestock, implying the existence of more or less stable outdoor settlements. Those in the valley and plain of Xàbia, would not have been preserved because the area has been strongly altered by man since ancient times. However, the existence of villages from the beginning of the sequence is documented in zones nearby, such as the head of the Serpis river (Mas d'Is), as well as in the mid Vinalopó river valley (Ledu, Novelda) and in the lower Vinalopó (l’Alcúdia, Elx).

**The daily lives of the first farmers**

To find out how these first farmers of the Marina Alta lived, the palaeoenvironmental sequences and the palaeoeconomic data of well-studied sites such as the Cova de les Cendres must be examined, as
the information from the Cova del Montgó, despite being abundant and of great interest, comes from old excavations without stratigraphic references (Bernabeu et alii, 1997, 2001a). The Cova de les Cendres is the pivot and obligatory point of reference to any discussion, as already seen in the case of the Upper Palaeolithic.

Nevertheless, the evolution of ceramic styles in the Cendres sequence enables chronological and cultural correlations with materials from the Cova del Montgó, as they are in an area with comparable ecology and similar habitability conditions.

From the earliest stages of the Neolithic sequences of Bolumini and especially of Cendres there is evidence of the remains of already domesticated species of plants and animals. (In the Iberian Peninsula there are no wild ancestors or antecedents of wheat and barley, cereals grown by the first tillers). This indicates the implantation of a grain-based economy. This assumption is confirmed by the analysis of charred remains of vegetables (a discipline called **anthracology**), which point to a decrease in tree species to the detriment of herbaceous cover. However, it is difficult to pinpoint what role environmental conditions played in this process, as compared to human activity. Considering the small size of human groups, this was not a large-scale uncontrolled pressure. Rather, it seems that the impact of agriculture and livestock on forest degradation was cumulative and discontinuous. The initial Mediterranean forest of pines, holm oaks and oaks was transformed with the help of environmental factors and the intensification of group farming activities.

With the available data, it is difficult to pinpoint the type of agricultural technology used, although pollen concentrations and data provided by anthrology do not indicate the technique of igniculture (use of burning). The possibility of intensive agriculture with hoes has been suggested (Bernabeu, 1995). This was somehow based on a cereal-legume combination close to human habitats. Charred remains of pea seeds, beans and lentils have been documented in the Neolithic levels of Cendres. The intercropping of cereals and legumes helps to maintain the biological potential of the soil by absorbing different types of nutrients and prevents rapid depletion of the soil. This economic base was complemented by small herds of sheep and goats, and to a lesser extent, oxen and pigs, which constituted a food reserve during times of hardship.

The possibility of open-air village settlements arises once more. However, we have no evidence of them. Still, it is difficult to assume a settlement focused exclusively on caves, particularly when considering the possibilities afforded by soils with favourable characteristics in some areas at the foot of the southern slope of the Montgó, where the municipalities of Dénia (Jesús Pobre) and Xàbia meet. These are soft, white, well-aerated soils (tap) near permanent watercourses which exist even today in the case of the Barranquera (Barranc de les Valls), a tributary of the Gorgos.

The relationship with the occupation of the Montgó cave thus acquires a new dimension and links it with pastoral use, as seen in later times (Badal 1999, 2002), without ruling out other functions such as funeral and ritual. (Bernabeu et al, 2001a, 2001b). There are indications of occupations in this area for later periods, in particular in the area of the Pexet valley where a Roman Villa would be established in historical times.

The aforementioned aquatic / marine resources would have been a complement to the diet. The discovery of remains of various fish species in the Cova de les Cendres is an example of this. Activities that continued from earlier times, such as hunting or gathering wild plants and fruits, should not be forgotten. In this way, the people adopted economic strategies adapted to the potential
of the environment to minimise risks. Diversification of resources gave the Cova del Montgó and other cavities of the coastal area a favourable ecological niche for long-lasting occupation.

Neolithisation of the area

The strategy of land occupation by Neolithic pioneers seems to be related to the process of neolithisation on the eastern fringe of the Iberian Peninsula, and the "dual model". These groups chose unoccupied spaces or areas with few Epipaleolithic groups, such as in the Gorgos valley, especially in the areas closest to the coast (Cova del Montgó, Cendres). The middle reaches of the Gorgos are much more sparse in information on the early stages of the Neolithic sequence. There is only isolated evidence about what might be called “spaces of frequenting” rather than habitation sites. In this area, the valley must have had a function as a passage zone between the coast and more inland valleys (Penáguila group), in movements probably related to pastoral activities. The occupation / frequenting of the Cova del Mançano (Xaló) may be indicative of this phenomenon.

Continued occupation of the caves seems to have been interrupted at the end of the old archaeological horizon, from 5,000-4,900 BCE as can be seen in Cova d’Or (Beniarrés), Sarsa (Bocairent), Cendres and very possibly in the Cova del Montgó. This may be related to population growth, which was likely to have led to the fragmentation of the initial local groups. Many cavities, including the Montgó, had a pastoral function linked to the stabling of livestock.

Macroschematic rock art – Pla de Petracos

Photo Christine Betterton-Jones
The expansion of settlements. 4\textsuperscript{th} - 3\textsuperscript{rd} millennium BCE

As outlined above, the colonisation of new areas to develop an economic system based on agriculture and the subsequent appearance of open-air settlements has its roots in the Neolithic introduction of a producing economy. From the middle of the 5\textsuperscript{th} millennium BCE this process consolidated and expanded, with the total assimilation of the Epipaleolithic culture.

This evolution can be followed in areas such as the valleys of the middle and upper reaches of the Alcoy or Serpis river. More and more open-air settlements are now being documented there, leading to the definition of a settlement type which optimised the lower reaches of valleys and river terraces during the 4\textsuperscript{th} and 3\textsuperscript{rd} millennia BC. This is a dispersed type of community with many, sometimes very extensive settlements creating a model of land occupation defined as an 'open settlement' (Bernabeu et al, 1989). This was radically different from what would be seen in the Valencian region during the next millennium, the Bronze Age.

Perhaps a series of essential changes had taken place throughout the 4\textsuperscript{th} and first half of the 3\textsuperscript{rd} millennium BCE: population growth, production capacity, the development of the plough. These things are reflected in the archaeological record with the appearance of large settlements of silos and dwellings surrounded by moats.

\textit{Evidence in the Marina Alta}

The data for this period in the Marina Alta are fragmentary and almost exclusively related to funeral practices. There is some information on open-air settlements from the lower Gorgos where (considering the farming technology used by Neolithic communities) there is land suitable for agriculture. This consists of light, well-aerated soils at the foot of the southern slope of the Montgó with abundant water resources, such as the Pexet valley (Xàbia) and Les Bassetes (Gata) as well as the white lands in the area of Benissa and Teulada where the Berdica and the Tossal de Font Santa sites are located.

The Pexet valley site is in the middle of the Xàbia valley, on a small elevation occupied by vineyards, almonds and olive trees, halfway between the southern slope of the Montgó massif and the Gorgos river. It is very close to the permanent watercourse of Barranc de les Valls. Archaeological materials come from surface surveys, and hence there are limitations in determining their chronology. They include several fragments of handmade orange-hued earthenware, which are outstanding in the quality of their finish. Nevertheless, these remains are very significant because it is extremely difficult to identify prehistoric settlements on flat areas. The Pexet valley findings could indicate that this space was chosen as a place to settle because of its suitability for agriculture. This is corroborated by the later location of a Roman rural villa in the same area.

The place was not chosen randomly, as it takes advantage of one of the white marl outcrops in the Xàbia valley which could have been cultivated with Neolithic tools. The proximity of water and the tempering effect of the Montgó mountain on the climate (providing protection from the north winds), all point in the same direction. Also, the location of the site on a small rise protects it from possible floods. Although it is dangerous to link such findings to a particular cultural period, the
combination of variables such as location on flat ground, the presence of relatively high-quality hand-made pottery, and location in an area of intense agricultural exploitation, could link this site to the final period of the Neolithic or Chalcolithic sequence. It is not far from the Barranc del Migdia on the southern slope of the Montgó, where the cave of that name is located and in which there is an interesting collection of Chalcolithic (Copper Age) materials and a famous set of schematic art.

**Funeral rituals – collective burials in caves**

In much of the Iberian Peninsula and western Europe, a new funeral ritual was being used, in which the dead were deposited in megalithic chambers. However, uniquely in Valencian lands, the funeral custom consisted of collective burials in natural cavities. Various types of grave goods (flint flakes and arrowheads, ceramic vessels, idols and images of divinity, etc.) were placed next to the deceased, accompanying them in their transit to the beyond. The Cova del Montgó and the neighbouring Cova del Barranc del Migdia were used as burial places at least from the second quarter of the 3rd millennium BCE and they may be linked to the settlements in the Xàbia valley mentioned above, or to others unknown. The Cova del Barranc del Migdia is best known for its collection of schematic art (Casabó, 1997a; Soler 2002). The set of images is located in the so-called "chamber of paintings" and is linked to this funerary-symbolic universe of the Valencian region in the 3rd millennium BCE. Based on the excavated levels, the cave was used recently in comparison with chronologies of several other burial cavities in the southern Valencian area such as the Cova d’En Pardo (Planes) (between 3,350 and 2,850 BCE) and the Cova de la Pastora in Alcoy (between 3,600 and 1,800 BCE). These burial cavities trace the origin of the funerary practice in the Xàbia area towards the middle of the 4th millennium BCE in calibrated data (Bolufer et al, 2013).

The motifs represented are diverse: finger marks, soliform (like a sun), stelliform (star-shaped), anthropomorphic (human), zoomorphic (animal), zigzag, triangular, pectiniform (like a comb), among others. Most of them are painted in deep black and express a complex symbolism. A close parallel is found in the Cova del Barranc del Palmeral (Teulada), because of the similarity between the pectiniform motifs in both sets. Recent excavations at the Xàbia site are providing new information on burial customs and practices, which may help in understanding the lifestyle and organisation of farming communities in the valley of Xàbia. It is worth mentioning that other small caves on the Solana (sunny side) of the Montgó also have remains of burials.

Inhabiting caves seems to have endured at least during the early stages of this phase. An important set of *sgraffito* decorated ceramics is documented from the Cova del Montgó. This technique involves making very thin incisions in the clay of the pot after drying or firing and is typical of the end of the Neolithic sequence. This pottery has some symbolic connotations through parallels with schematic art, such as the paintings in the Cova del Barranc del Migdia, although this will have to be studied more deeply.

On the other hand, the painted ceramics of the Cova del Montgó and the Cova de les Meravelles in (Xaló) reflect Andalucian influences during the late Neolithic period, even though the clearest parallels in funeral contexts are in the Murcia area (the Cueva de los Tiestos), Jumella and the Blanquizares de Lébor, Totana). This indicates a possible communication route linking the area of
the Jumella-Yecla Plateau with the Marina Alta. Sections of this route are the Villena corridor, the area of Alcoy, continuing down the Serpis river to the coast, where it connects with the coastal corridor in a southerly direction. Interestingly, in the middle of the twentieth century, it was possible to make the train journey from Yecla to Dénia following the same route.

Other items from afar (e.g. ivory, lignite, ostrich eggshells, ophite (a type of crystalline volcanic rock) in the grave goods of underground burials indicate contacts in many directions. The first signs of metallurgical activities had appeared in the Valencian region during the first half of the 3rd millennium (2,800 years BCE), as in the case of the town of La Vital (Gandia) in the neighbouring region of La Safor. This was a few centuries before the first Bell Beaker influences arrived (Bernabeu et al. 2006b), which reinforces the idea of a true Chalcolithic archaeological horizon in the central regions of Valencia. The evidence is the finding of copper objects such as punches, points and axes. In the Marina Alta during this late Neolithic period (also known as Eneolithic or Chalcolithic) copper objects (especially punches) are only found in burials, such as those of the Cova del Montgó, the Cova del Barranc del Migdia, and the western small cave (coveta) on the Montgó solana (all three in Xàbia) and other examples spread throughout the region.

The influence of the Bell Beaker Culture

At the end of the Chalcolithic, the “campaniform” bell-shaped ceramic vessel (found in settlements and especially in burials) spread throughout much of Europe. The name “campaniform” comes from the bell-shaped profile of the vessel most representative of the ceramic group. These are ceramics of fine clays and good firing, with surfaces decorated with the impression of a comb or through incised lines, forming geometric motifs. Bell-shaped pottery is usually accompanied in burials with copper objects (javelin tips and tongue-shaped daggers) or ivory (different types of buttons with v-shaped holes). To date, Bell Beaker elements in such an extensive territory are associated with social prestige and ceremonial functions mainly linked to funeral rituals.

Evidence regarding the so-called transient Bell Beaker horizon between around 2,500 and 2,150 BCE is scant, as it is for the previous period. In this case, there is only information provided by materials from various burial caves in the mid-Gorgos valley (Peña de las Arbones, the abric del Banc de les Coves (rock shelter), both in Parcent) and evidence collected in the Cova del Montgó in a more than likely funeral context.

The pieces found in the Xàbia cave which can be connected to this period are ceramics decorated with Bell Beaker incised motifs, and also metal objects. The latter consist of a large copper sheet and a triangular point with a quadrangular base, both flattened and extremely thin. This thinness reduces functionality and accentuates their votive nature. A bi-pointed punch has also been documented. These elements indicate southern influences (Simón, 1997a).

More doubts are raised by the metal grave goods of the Coveta del Flare, also in Xàbia. They consist of a flat-sectioned axe and a dagger with central ribs and notches, which are alien in type to the Chalcolithic and Bell Beaker world of the area, but which have parallels to metal objects of the Millares cultural sphere (Andalucía) between the 3rd and 2nd millennium BCE. Southern influences
reached the Marina Alta and neighbouring regions a little later, although these pieces are better placed in the funerary contexts of the 2nd millennium BCE, according to Simon (1987).

An ideological break with the previous period, characterised by collective burials, is also evident. Bell Beaker grave goods are associated with individual burials, within the framework of a circulation of prestigious goods, such as metal objects, which were considered symbols of social status. This tendency is also seen during the Bronze Age. In this context, it would be valid to identify the Bell Beaker Horizon as a transitional phase.

A new settlement model formed which coincides with the Bell Beaker ceramics. The people looked towards mountain heights, in a model that would extend during the Bronze Age, although the villages of huts and silos still existed. The scant data available in the Marina Alta can be related to exchange networks established beyond the region during the Bell Beaker period. The role of the Marina Alta coastal area in the maritime diffusion of Bell Beaker elements to the Balearic Islands needs to be evaluated. Sites with the typical panoply of ivory buttons, archery bracelets and ceramics with Bell Beaker incised decoration have been found in the Balearics (Guerrero, 2004), and it should be noted that a button with a V-perforation was found in the Cova Foradada, which could indicate these relationships.
Widespread occupation of the area in the 2nd millennium BCE

The Early Bronze Age

The Bronze Age, which marks the last phase of prehistory, began between the 3rd and 2nd millennia BCE. How the change in society occurred cannot be analysed in depth as there is little data contrasting Bronze Age habitats with those of the earlier Bell Beaker period. Nevertheless, the archaeological record of 2,200 BCE documents a large number of villages located in high places. These villages have a certain urban nature, with terraces, walls and rectangular sections, often arranged along the sides of a central street. This is thanks to the mastery of construction in stone and mud and adaptation to the topography of the mountains.

Structural remains include lines of walls which form part of terraced constructions designed to level the land and expand the useful surface of the settlement. However, there are no signs of large defensive structures. The material culture fully incorporates metal utensils, first copper and then bronze (a copper and tin alloy). The knapped stone industry is almost exclusively focused on making sickle teeth which are worked flint pieces embedded in a wooden structure to form a kind of sickle used to cut grains. Burials were usually individual or of a small number of people, as suggested in the Bell Beaker transition horizon, which perhaps indicates an incipient social hierarchy.

The traditional image of societies in the Valencian region from the beginning of the Bronze Age until well into the second half of the 2nd millennium, is that of a very uniform "culture", with a strong personality of its own. It possessed characteristics that differentiated it from Argaric societies of the South-east peninsular (in what is now the province of Almeria). These days, that image of uniformity and simplicity has given way to a vision of greater complexity and diversity, in which regional groups (facies) are evidenced. This phenomenon is seen especially in areas of contact with other "cultures" such as in the Vinalopó basin and the Alcoy area (areas bordering the Argaric and the Manchego Bronze Age societies respectively).

Unlike other areas of the Valencian region, systematic and extensive excavations of Bronze Age villages have not been carried out in the Xàbia municipality, nor in the Marina Alta as a whole. Our knowledge of the population of this era is based mainly on materials collected from surface surveys and emergency excavations.

There are many small settlements on the tops of hills in the Xàbia area: Tossal de Santa Llucía, the Alt and Cingle de les Capçades, el Castellet, el Cap Prim, la Punta del Barranc d'en Batges, el Portell de Roger, as examples. Even so, one must be cautious when assessing the intensity of settlement since the high density of villages could be more fictional than real. It may be that only a few were contemporary (Hernández, 1997a).

Looking at a larger area and moving inland up the Xàbia valley, it is notable that settlements extend along the lower and middle reaches of the Gorgos River. They are on medium-height hills (rarely exceeding 350 metres) but with difficult access and primarily near the bottom of valleys.
identifies them as being agricultural in nature, controlling the most fertile and best-connected lands with a system characteristic of the Valencian Bronze Age. The settlements are dispersed, consisting of small units (in many cases it is not possible even to speak of villages), with no signs of hierarchy at the territorial level. This phenomenon is related to the breaking of new agricultural lands in a background of population increase and the fragmentation of rural communities.

This model of occupation and land use is different from the previous period. During the Neolithic, settlements were in the centre of the best farmland, close to permanent waterways (hoe agriculture). Priority is now given to the control of cultivated areas in rain-fed agriculture (“secano”) in which fields no longer need constant attention, although, as a rule, they are always less than a kilometre from the village.

**The continued importance of caves**

Settlement patterns thus follow the characteristics defined for the Valencian Bronze Age. However, there are some differentiating features, such as the relative importance of cave use for livestock. The persistence of cave occupation is a recurring phenomenon in the recent prehistory of Xàbia and its surroundings. This is the case for the Cova del Montgó, where there were Bronze Age materials related to its use as a habitat, the cave perhaps being linked to a nearby village (Santa Llúcia or Punta del Barranc d’en Batges).

The Cova del Montgó has the characteristics to be a habitat in its own right (dimensions, water, and so on), without having to depend on other settlements. The presence of sickle-teeth, pestles, cheese-makers and abundant ceramics (with fragments that could belong to storage vessels) paints a more complex picture of the settlement patterns of communities that had adopted a production economy as an exclusive way of life.

Some objects from the Cova del Montgó which are difficult to interpret can be linked to the Bronze Age, despite a lack of stratigraphic references. One is an ivory cylinder decorated with incised lines: triangles filled with dots at the top, two small bands that frame a zigzag at the bottom and a narrow band decorated with a dotted line in the middle. It could be a container, or maybe a cylinder that was used to decorate a wooden object. It is difficult to date accurately due to of a lack of additional information. There are parallels in central Europe from a Hungarian site dated 1,900 BCE but the clearest influences link it to more recent times, to the Italian Terramare culture in the Po valley (c. 1700–1150 BC) or the Balearic Islands, continuing ties that had begun in earlier periods (López Padilla, JA and Hernández Pérez, MS, 2011).

The use of secondary products from domestic livestock acquired a prominent role in subsistence. Pastoral exploitation of the Montgó slopes seems to have been an important addition to the economy of groups living in the area. In this context, one can interpret the finding of typical Bronze Age ceramics in a rock shelter such as the Balma de la Solana del Montgó, (used until recently as a pen) to indicate a place which could have been used seasonally or temporarily. Other examples of use related to daily tasks and storage include the Cova del Fardatxo (Teulada) and the Cova de les Meravelles (Xaló).
There is no clear evidence of a funeral use in these caves, although they show evidence of having been occupied. The funeral aspect is only partially known; both in the study area and throughout the Valencian region in general, when compared with the abundance of information from the previous Chalcolithic period.

The information available indicates burials in a series of small caves and cracks along the Montgó massif. This is related to the survival of deeply rooted traditions from the Neolithic period. Yet, changes in some customs are inferred such as the adoption of individual or double burials. Possible examples (which should be considered with reservations because their cultural and/or chronological affiliations are unknown) are:

- in the municipality of Xàbia: the Cova del Montgó, Cova Oest del Cingle de la Solana del Montgó, Cova Est del Cingle de la Solana del Montgó,

- and in the municipality of Dénia, oriented towards the Girona river basin: the Cova del Barranc de l'Herda, the caves of the Penya de l'Àguila, and the Cova Ampla.

This concentration demonstrates the strong symbolic power that the Montgó would have had for 2nd millennium BCE societies, acting as a kind of regional funeral temple, something which is evidenced both in earlier and later times.

A funerary function is in less doubt in the cases of the Cova del Montgó and the Cova de la Rabosa, although a lack of systematic excavations causes the chronology to fork from the end of the Neolithic to the Bronze age. Several human remains have been recovered from these two sites. They have been deposited in the MARQ (Archaeological Museum of Alicante) and the Soler Blasco Archaeological and Ethnographic Museum of Xàbia. The Cova del Montgó yielded remains of at least nine individuals, five adults and four children. The Cova de la Rabosa contained a complete skull and several post-cranial skeleton fragments of an adult between twenty and twenty-five years old and the remains of two children, one two years old and the other between ten and eleven. An anthropological study of these remains, and others from different burial caves in the Marina Alta (Soler and Cabasó, coord., 2017) infer that a person would not be excluded by sex or age at burial since the presence of infants has been verified. This demonstrates that children were socially recognised within the community. Another anthropological study which helps to clarify the relationship between these people and the environment is the analysis of bone markers indicating physical activity. Such markers were detected in a calcaneus (heel bone) of the adult man from the Cova de la Rabosa and could be related to the individual travelling long distances over rugged terrain, reflecting the pastoral activities of these societies (Soler and Casabó, coord., 2017).

**Marine resources and outside influences**

There is another group of caves on the cliffs near the coast. These are usually small and characterised as having limited examples of material culture combined with the remains of molluscs. The occupation of these places could be related to the exploitation of a particular resource, such as the sea, and would likely have been sporadic and/or seasonal. It is easy to assume that they would be linked to other settlements nearby. For instance, The Cova de la Mina (with
reservations) in Cap Negre, is close to the Cap Prim settlement; and the Coves Santes and Cova Negra in the Cap de Sant Antoni, are close to the Santa Lucia settlement, although it is not possible to verify if these sites are contemporaneous with each other.

This exploitation of the marine resources of cliffs has been a constant feature of coastal prehistoric communities in the Marina Alta. The idea that the use of caves throughout the 2nd millennium BCE was only marginal therefore needs to be reconsidered. Instead, it is one more option in a productivity system which gradually became more specialised. This would be seen more clearly during the late Bronze Age.

Hand-made ceramics typical of the Bronze Age were found in the Coves Santes, on the southern slope of Cap de Sant Antoni, along with fragments of barquiform (hand) mills. The cave could have had a stable occupation as it has good habitability and fresh water throughout the year. Red pigmented pictorial motifs in one of the cavities of the Coves Santes complex gives us another vision, the symbolic one, in which groups that frequented the Montgó massif during the Bronze Age must have participated, as they had in previous times (Casabó, 1997).

The impression is that the Gorgos valley and by extension, the Marina Alta, are at the edge and on the theoretical southern limit of the Valencian Bronze Age culture. The general material culture and patterns of occupation are the same, but there is evidence of contacts with the Argaric culture, probably through the interchange between elites. For example, the ceramic materials show variations when compared with typical forms of the Valencian Bronze Age, with more tapered profiles and an absence of other characteristic features such as geminate (twinned) vessels (Simón, 1990). Metal is not very abundant but seems to have a south-north gradient in terms of the documented evidence (Hernández, 1997a). As in the Alto Vinalopó, silver cannot be explained without contact with the Argarics. The spiral from the Penya del Cingle (Pedreguer), preserved in the Museum of Xàbia, is reminiscent of four found in the necropolis of San Antón in Orihuela (Simón, 1998). According to J. L. Simón, a dagger with recesses on either side found in the Coveta del Flare in the area of Cap de Martí (Xàbia) seems to follow the design of halberds from south-eastern areas in the 2nd millennium BCE, because it has a central rib, which is non-existent in more northern contexts (Simón, 1987).
The Late and Final Bronze Age. New strategies in land occupation

Transition

Early in the 1980’s, M. Gil Mascarell addressed the transition from the Bronze Age to the Iberian culture in the Valencian region and, in so doing, defined the cultural horizon of the Late Bronze Age. This provided a link between the Valencian Bronze Age and the beginning of the Final Bronze Age.

The Late Bronze Age (1500 - 1250 BCE) runs parallel with the period of the same name in the south-eastern zone of the Iberian Peninsula and is distributed unevenly in the Valencian region. There is a higher concentration of sites in the southern area, closer to where the Argaric cultural centre had been, with sites such as Illeta dels Banyets (El Campello), Tabaià (Asp) and Cabezo Redondo (Villena). and a lower density in other more northern areas, such as the towns of Tossal del Castellet (Castellón) and La Peladilla (Requena).

This late phase of the Bronze Age is characterised by influences from the meseta (Avila area) in its Cogotas I phase (Delibes and Abarquero, 1997; Hernández, 1997a). There was a cultural flow from the northern sub-plateau, probably due to transhumant livestock farmers. They spread particular types of ceramics such as deep and shallow carinated bowls having a vertical edge, carefully treated surfaces and a profusion of decorative motifs. In an initial phase, incised decorations predominate, with zigzags or herringbones like those in ceramics from the Cap Prim settlement (Xàbia). Later, the abundant phase of the Cogotas I horizon coincides with the boom of the "Boquique" technique (also called dot and line) stippling and excision. This is a technique consisting of extracting a part of the clay from the vessel when it is still soft.

The use of copper and bronze was widespread during those times. Metallurgical activity in the Cap Prim settlement has been verified through the discovery of moulds for casting chisels and punches, as well as copper nodules. The question is whether these variations in material culture led to other changes at the socio-economic level and in models of land occupation.

Various settlements in the lower Gorgos valley can be placed in the same time frame (Late Bronze and the beginning of the Final Bronze Age). Other sites of this period are Cap Prim, Santa Llúcia and Tossal d'Arnau (Benitatxell). One might also add the Bronze Age levels discovered in the emergency excavation in Carrer Santa Marta, Xàbia Old Town in 1995. The excavator, Alberto González, dated these to the Final Bronze Age.

Large scale transformations

A series of factors influencing settlement patterns can be determined which indicate a new model of land use. This evolution from the previous period was due to large scale transformations that can be seen throughout the Mediterranean:
A decrease in the number of villages

The pattern of a dispersed settlement consisting of hamlets spread throughout the Gorgos valley shattered, leaving most of the settlements abandoned. This is especially prominent in the middle reaches of the Gorgos. A similar set of changes during the transition from the Middle to Late Bronze Age has been reported by several authors in other areas such as the Vinalopó where there was population concentration around particular settlements such as Cabezo Redondo (Villena) and in the Teruel regions of the Iberian System. Environmental conditions could have played a part, although they are not a determining factor in this process. Even so, the eruption of the Thera volcano in the Cyclades has been connected to a period of global cooling which could have affected the productive systems of primitive agricultural communities (Ruiz Gálvez, 2001).

A shift in settlement towards the coast.

The archaeological sites from this period are near the coast (Santa Llucía, Tossal d'Arnau, Xàbia urban centre) or directly on it (Cap Prim). This trend also occurred in the Vinalopó area, where the middle and lower reaches gained influence. A related event could be the reoccupation of the village of La Illeta dels Banyets during the Late Bronze Age. A series of enclaves were established on promontories projecting into the sea. These served as reference points for navigation along the coastline: Cap Prim, Illeta dels Banyets, Cala del Pino (La Manga del Mar Menor) and Punta de Gavilanes (Mazarrón) on the Murcian coast, Orpesa la Vella (Orpesa, Castelló). This indicates an expansion of trade relations attributable to the rise of Mycenaean dominance in the Mediterranean and the growth of broad commercial routes which were not limited to cabotage navigation. Coastal places such as Cap Prim could have functioned as neutral exchange points, due to their physical nature and symbolism as a space between the sea and the mainland.

There is evidence of a higher degree of specialised labour.

Although metallurgy was widespread, it was specialised at a local level. For example, Cap Prim could have acted as a supply point for ore or scrap metal from southern production centres and as a later diffuser of manufactured objects, techniques and fashions towards the interior (Simón and Esquembre, 2001). The Gorgos valley was a possible route to reach the interior. This explains the presence of staniferous (tin) ornaments in the Beni Sid site, Vall d’Ebo (Simón, 1995, 1997).

There are other indicators of widespread metallurgy in these communities. From Cap Prim there are the following examples: a sandstone mould to make chisels, a fragment of a saw, as well as the remains of slag and a possible fragment of a nozzle; and from Santa Llúcia, a dagger with rivets and an axe fragment. Signs of specialised activities can also be found in pottery, where a variety of products is seen. Some are kitchen tableware, with rough finishes and others having well-treated surfaces, refined clays and fine decorations. There also seems to have been a textile industry in the Tossal d'Arnau as evidenced by a cylindrical piece of fired clay and a possible loom counterweight, the latter being similar to those from Cabezo Redondo, dated in the Late Bronze Age (Simón y Esquembre, 2001).

Greater variability in the types of sites

This contrasts paradoxically with a decrease in the number of settlements. Along with high-altitude villages, which had possibly been occupied since the previous phase (Santa Llúcia, Tossal d'Arnau), there are others with locations clearly linked to new strategies from the socio-economic and, perhaps, a political point of view. One such is Cap Prim, which has an obvious maritime vocation. It
is possible that there may have been settlements on flat areas during the Middle Bronze Age, but these cannot be identified in the archaeological record.

The settlement on Calle Santa Marta in the Old town of Xàbia must belong to the end of the Bronze Age sequence. (Bolufer, 2004b). The importance of this site is noteworthy not only because of its material record and housing structures, but because it is the first known occupation in the current urban area of Xàbia and it dates back to the Bronze Age. Among the materials from this site in the Museu de Xàbia are ceramics typical of the late period (flat bases, bowls with turned out lips) and evidence of metallurgical activity (slag fragments). Although it is in the upper part of the town of Xàbia, its location must be linked to a different dynamic from that seen for hill top sites with difficult access. If one adds the probable continued use of the Cova del Montgó at that time, the picture is less of dependence on locating settlements in high areas and more of variety in choosing places in which to live and work.

The influence of the Urnfield Culture

Almost nothing is known about the character of the communities in the Marina Alta, particularly the Gorgos valley at the end of the Bronze Age (around 1,200 to 700 BC). The scant but important materials from the excavation of Calle Santa Marta in Xàbia and Cova del Montgó cannot be used to make a timeline of the period, but they do give us some clue as to the population dynamics in the Xàbia area at that time. A vessel with a flat base and an out-turned lip from the Cova del Montgó is typologically linked to ceramics from the tradition of the **Urnfield** culture (Simón, 1987, 1997). This culture has its origin in central Europe and was formed by small families of farmers and herdsmen who expanded into southern Europe looking for suitable land for their crops, and pastures for livestock. Furthermore, these groups made ceramic, metal and textile products. The ceramics continued to be made by hand, but new techniques and decorative motifs were used, achieving smooth surfaces and a perfection in finishes unknown until that time.

The Urnfield Culture had a characteristic funeral rite, consisting of burning the corpse and putting the ashes inside an urn that was buried in a small hole in the ground. The materials from Calle Santa Marta kept in the Xàbia museum point in that direction. Among the ceramics are flat bases with a heel, outwardly turned lips and some vessels with a marked “S” profile. The good quality clays and careful finishes are features that clearly reflect a northern influence. Materials related to the Urnfield tradition and its funerary context are found as far south as Campo de Vera in the north-east of Almería province (Lorrio, 2009-2010). These influences are also detected in the south of Alicante province, and, more strongly, in the north of Vinalopó, where there are sites with strata from the end of the Bronze Age such as Tabaià (Asp), Caramoro II (Elx) and Mola d'Agres. More such sites are found further north, but also in the southern part of the same river and in the Segura river area e.g. Saladares (Orihuela), Barranc del Botx and Penya Negra, both in Crevillent (García Borja, P. and Pérez Jordá 2012).
The influence of the Eastern Mediterranean and the beginning of historical times

The first materials demonstrating eastern Mediterranean influences date from around the middle of the 7th century BCE. These are Phoenician products found alongside local handmade ceramics in settlements such as the Alt de Benimaquia in Dénia, and the Plana Justa in Xàbia. It seems that Cap Prim, the other lower Gorgos settlements and the Illeta del Campello were abandoned at the end of the 2nd millennium coinciding with, or a short time after, the collapse of Cabezo Redondo (Villena). This could be related to the decline of the Mycenaean civilisation and the reorganisation of Mediterranean commercial routes which had been linked to its centres as well as to new dynamics in land occupation at the end of the Bronze Age (Jover and López Padilla, 2005). Other places took over, such as the proto-urban settlement of Penya Negra in Crevillent. The centre for trade shifted to western Andalusia and the Atlantic world maintaining the central European influences mentioned above.

The importance that the Vinalopó and Segura corridors achieved in the exchange networks of products and ideas at the end of the Bronze Age is highlighted. Without doubt, the Marina Alta and Xàbia area participated in these relationships which had been visible since the Neolithic.

It is hoped that new findings and the publication of studies currently being carried out will provide additional data regarding the scope of settlement in the Xàbia region at the end of the Bronze Age. The so-called Iberian culture was shaped by these late Bronze Age societies, together with innovations and cultural changes brought by Phoenician settlers from the eastern Mediterranean in the second half of the 7th century BCE.

Cap Prim / Cabo de San Martín

Photo from www.Xabia.org (Xàbia department of Tourism)
Introduction and prehistorical background

The Cova del Barranc de la Foradada is located on cliffs on the north side of the Cap de Sant Antoni, at the entrance to the ravine, about forty metres above sea level. It is a small, north-facing cavity, the remnants of a much larger cave which collapsed creating the present ravine with its complex pattern of caves.

The importance of a site is not measured by its size. Some may think that an archaeological site is important because lots of valuable materials have been found there or because the remains of buildings are in good condition which enables them to be restored and be visited. Surely those criteria are as valid as any another, but from time to time sites appear which are important because they open up key aspects of our history and this is just what has happened in the Cova del Barranc de la Foradada. We need to keep in mind that when we say "our history" we are not referring to a local or regional area, but to the history of our species, the history of Homo sapiens.

In order to better understand what we mean, we need to make a brief, schematic overview of what we know so far about the process of hominisation and the spread of the genus Homo throughout the world.

About two and a half million years ago several similar, tool-using hominid species lived in East Africa. It seems that these species never left Africa, although some fossil remains from Eurasia show archaic features that may make you think otherwise. What we do know is that the species Homo ergaster left Africa almost two million years ago and began to colonise Eurasia. Remains of the so-called Homo georgicus have been found in the Caucasus, in the present-day republic of Georgia, and Homo erectus appears in the rest of Asia. They were not to become extinct until about 60,000 years ago when our species arrived.

In Europe, the findings are slightly more recent and usually go back only 1.4 million years. These are of the predecessor of Homo, a human genus of which very few fossil remains and deposits are known, probably because it did not adapt successfully and became extinct. Half a million years ago, however, a new species appeared in Europe: Homo heidelbergensis, the ancestor of Homo neandertalensis, the human species that was to inhabit our continent until the arrival of Homo sapiens.

Our story also begins in East Africa a little over 200,000 years ago when we appeared as a species. For millennia we populated several places on the African continent and spread along the coast to the north. Genetics and archaeology show that some 60,000 years ago we had arrived in East Asia and shortly after in Australia. Along the way, the last Homo erectus disappeared, except those who lived on the island of Flores in Indonesia (Homo floresiensis) until about 12,000 years ago.
The route to the west was a little more difficult. Europe’s Neanderthals lived there, powerful and intelligent beings perfectly adapted to the icy cold. But 45,000 years ago, we already inhabited places in Eastern Europe and only 40,000 years ago the north-east of the Iberian Peninsula. In the southern Ebro and woodland habitats, there were only Neanderthals, the last of their species, but this would soon change. It is in this context that we must understand the Foradada, a place where groups of human beings of our species lived a little more than 30,000 years ago. These humans surely knew the others, the Neanderthals, and somehow contributed to their extinction.

**The cultural phases of the Cova del Barranc de la Foradada**

The excavations of the Cova del Barranc de la Foradada centre on two sectors and have allowed us to establish a chrono-cultural sequence of great scientific interest:

**Phase IV**

In Sector I, it has been possible to excavate down to a limestone crust dated at over 130,000 years ago which separates the levels of the Upper Paleolithic from older levels in which there do not appear to be any remains of wildlife or human occupation. At present, therefore, the earliest evidence of human presence corresponds to Phase IV, which is Carbon 14 dated to 33,900 ± 310 BP. But the lack of enough implements to determine their typology and technology prevents us from saying whether we are dealing with the first occupations of *Homo sapiens* or what was left by the last Neanderthals.

Pollen studies and absolute dating show that this Phase is at the end of the interesting Würm II-III period, which was humid and relatively temperate, enabling greater forest cover of pines and junipers. The climate became progressively drier and colder as we enter the Würm III (from 14,000 BCE)

**Phase III**

Most levels, however, belong to what prehistorians call the Aurignacian when the first evidence of the arrival of humans with modern anatomy in Europe was found and which has been dated in the Foradada to between 26,110 ± 460 BP and 29,940 ± 150 BP. This is the phase with the largest number of wildlife remains and objects of stone and bone, as well as some extraordinary archaeological information that has allowed us to demonstrate different strategies that our ancestors used to survive and to evolve.

Palaeo-climatic studies show initially a severe, cold and exceptionally arid climatic period which gradually became less dry and more temperate. The vegetation surrounding the site seems to have been made up of woods of black pine and juniper with some deciduous oaks but little by little the climate improved, as is shown by the increase of undergrowth species, holm oaks and the genus Prunus.

In the Foradada there is an outstanding set of fossil remains which document the following species: wild cat, lynx, leopard, wolf, horse, donkey, wild boar, deer, auroch, goat, rabbit and several species
of birds including partridges, pigeons and gulls. Study of the fauna highlights a large number of cutting and or disjointing butchery marks made with stone tools. These marks are found on almost all species, from rabbits and birds to large herbivores, while bite marks from carnivores such as of wolves are rare. There are also marks on the leopard's remains indicating that they were probably hunted for fur, as undoubtedly the other felines were.

It follows from the general spectrum of the fauna that there is no specialisation by humans in hunting for one or two herbivores, a situation that occurs only at the beginning of the Upper Palaeolithic.

On the other hand, many animal remains are burned, which again implies the importance of humans in the formation of the archaeological deposit. This question is related to the finding of numerous combustion or fire structures which we will discuss later on.

In addition to meat, we have evidence that the humans who inhabited the Foradada cave sometimes consumed land snails and seafood, mainly mussels, clams, limpets, and sea snails, which indicates that the site was on a rocky shoreline in some ways similar to that of the present day. However, studies of the shoreline carried out in the 1990s by Dra. Maria Pilar Fumanal provide us with the information we need to make a picture of the palaeogeography and palaeoenvironment of the cave environment between 30-and 26,000 years ago.

Let us start with the fact that the intense cold made the poles enlarge, accumulating a lot of water as ice which is why the sea level fell 30-35 metres in front of the Cova del Barranc de la Foradada and some land emerged. North of Montgó the resulting coast was low and sandy and a wide coastal platform was exposed. But from Dénia to the south, the rocky massif of Montgó plunged from its summit to the sea, forming a series of rocky steps, one of which is the one we see today. But there was another at a lower level that is now submerged, which is where the humans inhabiting the cave collected their molluscs.

From the information available we can deduce a rugged landscape similar to today, but with gentler slopes where the coast formed a great plain about four kilometres wide to the north, in front of Dénia. This narrowed to less than a kilometre in front of the cape of San Antonio, meaning that animals passing along it would have to pass between two cliffs where hunters could set an ambush to bring down their prey increasing the chances of a successful hunt.

This whole area was covered by herbaceous plants with a few small pine and juniper groves. The ravines harboured small streams and springs of fresh water where some of the molluscs found in the Foradada came from. The wildlife mentioned was to be found throughout the area, occupying various ecological niches. Among these was Homo sapiens, the main predator of this ecosystem.

The advantage human beings had in occupying the top of the food chain was based on technology, social structure and symbolic thinking. There are examples of all of these parameters in the Foradada.

The technology used in making the stone tools found in this phase corresponds to what is called Technological Mode IV, which is characterised by the search specifically for products called blades,
the length of which is at least twice the width. From these blades various other tools were manufactured, such as burins, flakes, scrapers, denticulates and retouched bladelets called Dufour bladelets typical of the Aurignacian. “Use-wear” studies of the microscopic marks left on the working edge enables us to know exactly what each tool was used for. This study is still in its early days in the Foradada, but signs of work on hard materials such as bone or wood have been found, and also, though less frequently, on tanned hides.

As well as the stone instruments, there are three tools made of horn or bone. They are not very significant because they are either poorly made, such as a trimmed, polished horn tip, or are small fragments.

The other quality that sets humanity apart is its capacity for social structuring. However, we can only approach a partial, subjective and even indirect understanding of the social structure of a group from the early Upper Palaeolithic. In the Foradada, however, some data gives us a better idea of the complexity of the structure of a human society of the hunter-gatherer economy.

We know that the people who inhabited the Foradada had to form a small, very mobile group that stayed in the best places until those resources ran out when they then had to move on to ensure their survival. Where they stayed they developed the hunting and gathering strategies described above. They left exceptional evidence of their presence in the cave and all over levels V and IV we can see the remains of the fires that warmed their nights. Some fires are simple, with nothing but an orderly pattern of coals and burnt earth, but there are also more complex ones, surrounded by stones or with a paved base. It has sometimes been possible to make out areas where there are almost no signs of animal remains or tools around the fires. These could well be where they would sit or sleep. In sector II we also documented the four feet of a rabbit and some vertebrae of the tail where a skin had surely been left lying on the ground more than 28,000 years ago. In the same sector we have documented an alignment of rocks that forms a wall of three rows of stones separating the rocky wall of the cave from the area of fires and beds. There is a rubbish tip for bones between the wall and the cave.

Symbolic thinking is another human characteristic and once again there are several examples in the Foradada. Nineteen pendants made with perforated mollusc shells and two pierced lynx canine teeth to be used as pendants are considered to be much more than simple ornaments because they have a far wider symbolic significance. The few ornamental objects attributed to Neanderthals always belong to the final stages of their existence, and many researchers believe that they began to be made when they started to mix with Homo sapiens.

As with genetic mutations, cultural acquisitions of a human species may be perpetuated or lost, depending on whether they prove to be useful to their owner. It may seem strange, but the art and elements we consider as decorative today may have played a decisive role in the survival of the species, equally or more important than clothes, fire and technology.

Imagine for a moment that certain ornaments such as pendants, feathers and face paintings, are used to differentiate the status of members of the clan or - just as when we see a cross - we immediately know what it stands for. In the same way paintings in a cave can represent myths that the members of this clan know, or are signs that they can interpret. Recognition of ornaments typical of your clan
in other human groups or knowing how to interpret the signs painted in a cave can save your life in environments as demanding as those of the Palaeolithic.

There is one other find that can only be interpreted from the perspective of the complexity of symbolic thought. This is a pebble which had been very skilfully worked to produce a perfect sphere, 5.5 cm in diameter. In nature, there are objects, animals and fruits that are nearly round, but there are almost no perfect spheres. One can, therefore, deduce that some 28,000 years ago, someone conceived the idea of a perfect sphere and went ahead to make it, despite it not necessarily having any practical use.

Phase II

Phase III Palaeolithic levels end abruptly as the powerful Holocene erosion process destroyed most of the archaeological levels that originally existed in the cave. Phase II is much more modern and has been found only in pits dug into ancient sediments. These were later filled by a thin sediment containing blocks and stones with edges rounded by water erosion. This was formed under benign conditions, similar to today but more humid. This environment was very similar to that of the present and the coastline was more or less where we see it now, but the forest cover would have been different with a thermo-mediterranean oak forest, in which the black pine had almost disappeared and been replaced by the white pine. This species thrives in a sub-humid type precipitation zone where there is significant rainfall throughout the year, similar to what is typical today in the European Atlantic.

Level III identification and chronology is problematic because the only absolute dating is contemporary with the early Neolithic, while artefacts and processes for making use of biological resources are characteristic of hunter-gatherer groups. Apart from the mammals (among which there are no domestic species), the inhabitants of Foradada exploited the sea, and fish vertebrae, spines of sea urchins and mollusc shells have been recovered. These, particularly the limpets, would have mostly been collected on rocky sea shores.

Phase I

This is the most modern period documented in the Cova de la Barranc de la Foradada. It extends from the Eneolithic (Chalcolithic or Copper age) to the present. Excavations have shown that the environment was similar to that of today, with a rugged coast, eroded cliffs and ravines. The climate was arid and temperate with little forest cover, and the land was weathered by short periods of heavy precipitation. During this period the cave would have been visited occasionally by groups or individuals who came to exploit the marine resources and to use the cave as a refuge.

Human fossil remains.

Twenty-one human bone remains associated with the Aurignacian lithic industry and Pleistocene fauna were recovered at levels I and II of Sector II. Unfortunately, most of the human fossils were recovered at Level I which had been badly damaged by clandestine excavations which had seriously damaged and raided it. In fact, the only two definite datings are clearly contaminated and have nothing to do with most of the findings that are undoubtedly older. In order to date the human
fossils, which by their state of conservation seemed as old as the rest of the fauna from the same level, we dated two of them from level II which in principle we considered free of interference. The first was a right distal epiphysis of the tibia of an adult individual which gave a result of 7,580 ± 50 BP, very far from the expected age and surely must be related to the only similar level of chronology in sector I. The other fossil was the proximal epiphysis and neck of the right femur of an adult, whose carbon 14 date was set at 20,540 ± 80 BP. This corresponds to the late Gravettian or early Solutrean periods which had not been documented at the site. This we consider as a much older and contaminated sample.

We also had to find out if the fossils contained any traces of DNA and if so, whether they were from *Homo sapiens*, *Homo neanderthalensis* or hybrid individuals. The analyses were performed in three independent laboratories (in the Department of Evolutionary Biology of the University of Uppsala, in the Molecular Systems Laboratory of the Swedish Museum of Natural History and in the Department of Forensic Genetics at Linköping) and the results show conclusively that the remains belong to *Homo sapiens* with no evidence of hybridisation.

Some of the human remains in sector I may have belonged to individuals who died or were buried in the cave during phase II (Mesolithic), but we are sure that some are Palaeolithic and therefore must be contemporaneous with the Aurignacian occupations. The date of 20,540 ± 80 BP cannot be accurate and must be from contamination because there is no evidence of habitation of that time in the Foradada.

If Level I of Sector II of the site had not been damaged by pillage, be that because of ignorance or greed for collecting, we would have had clear answers to many of today’s paleo-anthropological questions such as the relationship between the Aurignacian industries and human fossil remains.

**The extinction of the Neanderthals**

We cannot conclude this article without referring to the most intriguing question in archaeological and palaeo-anthropological research over the last twenty years. The Foradada has its part in this controversy, although there are no Neanderthal remains and the human remains of *Homo sapiens* cannot definitively be associated with the Aurignacian bone and lithic industries. Nevertheless, we know that around 30,000 BP. individuals of our species had already crossed the Ebro border and reached the Foradada, which at that time was most probably on the actual sea-shore. This may even have happened 4,000 years earlier, but we need to be able to excavate more of Level VI in order to prove it.

There are many hypotheses about the disappearance of Neanderthals and there may be many reasons why they became extinct. But the undeniable fact is that we are still here and they as a species have disappeared forever. We now know that they never really went away, and some of their genes are still alive within each of us because there was successful breeding between Neanderthals and *Homo sapiens*.

The specific reason for the disappearance of Neanderthals remains a mystery. Theories based on technological superiority have been put forward, suggesting that our ancestors were better able to
compete and exploit the resources available in different ecosystems. Another idea is that the reasons were demographic as only a slightly higher birth rate (of *Homo sapiens*) could have ended all Neanderthals in only 3000 years. Or it could be that the genetic isolation of separated populations led to their extinction in a few thousand years.

Finally, there is another group of hypotheses we could call socio-cultural, according to which modern human groups developed more complex societies with co-operation between individuals and groups, improving our ancestor’s chances of survival. The Foradada stone sphere lies within these hypotheses since it demonstrates abstract thinking among anatomically modern humans. Art is the most complex manifestation of such thinking, but logical reasoning, mythological narrative, and science also become necessary for the survival of the species. Until recently we believed that only we were capable of abstract thinking, but now we know that Neanderthals also produced art and were able to express themselves in a symbolic way.

Artefacts from the Cova Foradada in the Xàbia Museum
Including the stone sphere

Photo of museum exhibit – Christine Betterton-Jones
The Cova del Barranc del Migdía (The Cave of the Midday Ravine)

Research team Marco Aurelio Esquembre, Juan de Dios Boronat, Consuelo Roca, Jorge Soler and Joaquim Bolufer.

Discovery for archaeology and description

On April 9th 1989, a group of young people from the Gata Cavers’ Centre were practising climbing on the cliffs on the Solana (sunny side) of the Montgó. Coming down the walls at the head of the Migdia ravine, they stopped at an open cave in the middle of the vertical cut, about forty metres above ground. They quickly noticed images painted in black on the walls and ceiling of the cave and turquoise glazed pots on the floor.

Subsequent visits confirmed the value of the site. It houses an important set of schematic-style cave paintings associated with a collective burial, both of which date from prehistoric times. However, the fragments of glazed ceramics found in the “chamber of paintings” belong to a much later occupation towards the end of the Andalucian period, shortly before the feudal conquest of the Marina Alta.

The Cova del Barranc de la Migdía or the Migjorn, is about 404 metres above sea level on the sheer cliffs of the Montgó, right where the ravine begins. It has three mouths or openings. The largest, which opens to the south-west, contains the group of cave paintings. At the opposite end, facing east is the entrance used for modern access. In the middle of the gallery, between these two openings, is a hole in the wall oriented south. This is reached from the central chamber of the cave which is the burial chamber of the site. The distance from the entrance to the chamber of paintings is about 38 metres although, if all the galleries are included, the interior passage is 52 metres, with a maximum difference in height between the ceiling and the lowest point of 9 metres.

Difficulties in excavating the site, due to the challenging access and costs, led to a postponement of further investigation. In 1990, the Museum of Xàbia started work copying and making a graphic recording of the paintings. This was published, together with an extensive study of the site in 1997 (J.Casabó, E.Martínez and J.San Pedro; Revista Aguaits no. 13/14).

Systematic excavation work started in 2009, thanks to financial support from the CIRNE Cultural Foundation. Since that first campaign in October 2009, there have been four more: two in 2010 (June-July and November-December), another between December 2012 and January 2013, the last and final campaign taking place between August and September 2014.

Archaeological excavation has disturbed the sediments in the central chamber where the burials are located. This space is about four and a half metres long (east-west) and about three metres and sixty centimetres wide (north-south), while the maximum height is 165 cm, though because some of the sediment was removed by excavation it reaches almost two metres at one point. To the north side of the chamber and heading north, is the beginning of a 50 cm wide gallery, which is filled with the spoils from the excavation of the collective burials.
The Cave Paintings

Along with the burials, the most important and unique aspect of this site is the collection of cave paintings. In the study mentioned above (Casabó, Martínez & San Pedro, 1997), ten panels of images were identified, all of them made in the schematic style and therefore considered contemporaneous with all the burials in the cave. The majority of the paintings, and certainly those that show the most refined technique, were made in black paint, while the few in red are limited in range, consisting mainly of fingerings or parallel bars superimposed on the motifs painted in black. The wide repertoire of images in black paint consists of bars, triangles, rhombuses, and other more complex geometric shapes in the form of meanders and zigzags, star, comb, quadruped animal shapes (probably goats), anthropomorphic (human) forms, and a complex motif that resembles an “idol oculat” (schematic idol with eyes) on a plate. Most of these representations, at least those that are better preserved, show a well-defined line with even, dense paint. Many of the motifs are very small, almost miniatures. This can be seen especially in the quadrupeds where maximum lengths rarely exceeding 20 mm.

Many of the motifs and images in the Cova del Migdia form scenes, such as the set of quadrupeds painted on the ceiling of the cave in panel 10; or they appear associated with each other, as with one of the best-known and significant groups in the cave, which consists of two horizontal and parallel pectiniforms (comb-shapes) and two laterally connected stelliforms (star-shaped) just below below the pectiniforms. This set, which seems to represent an “idol oculat”, appears to be associated with an anthropomorphic (human-shape) with a bi-triangular body, joined at the apexes, a round head, and arms formed by a vertical line.

Another of the most interesting and best-preserved panels is the 8th located in a small hole in the ceiling. This is also painted in black, with a large, round central figure, which is flat at the top and appears to be filled with angular strokes in a kind of grid. The closest similarities to this motif can be seen in a wooden “idol oculat” of the Chalcolithic age, which was found along with other objects in the Cueva Sagrada (Lorca, Murcia) which is another cave containing collective burials with dates very similar to those of the Migdia.

The Burials

Undoubtedly, the most notable advances in knowledge of the Cova del Barranc del Migdia have been thanks to the excavation of the central chamber, a space considered to be the burial chamber of the site. The five archaeological campaigns have uncovered remains of a collective burial consisting of a large set of “packages” of bones of various individuals: men, women and children.

The excavation revealed a minimum of 10 and maximum of 12 individuals, who were buried at different times in separate packages or groups.

1,935 fragments of human bones were collected. Their state of conservation is generally poor, in large part due to the decaying processes linked to the dynamics of the cave.
This currently shows hydrological activity which is more accentuated in humid periods. The internal structure of the cave, with long narrow passages, facilitates an active circulation of the air with a continuous current. Conditions were similar at the time when most of the cave burials took place. Bone, wood and charcoal remains have been exposed to significant variations in humidity and temperature, reducing the preservation of the bone record. This deterioration is most pronounced in the southern part of the chamber where calcification dynamics have been more active, affecting the archaeological substrate and the material record. In general, the bones are highly fractured and eroded and their condition is fragile.

The large number of burials placed in such a small space, as well as other factors which are hard to evaluate, make it difficult to identify and individualise the burial "packages", that is, which set of bones belongs to which burial. These factors might be the funeral rituals themselves, such as how the packages were left or how a new burial was placed above previous ones. Also, events which could have taken place afterwards may have altered or masked the original order (a process called "post-depositional"). For example, burrows may have been made by rodents and the place used as a shepherd's refuge or a place to hide. However, in the Cova del Barranc del Migdia it seems that successive burials did not alter the previous "packages" and that the rituals of burial meant they were not intended to be altered.

Based on field observations and the analysis of spatial distribution, we believe the remains are distributed in six "packages" or groupings of bones. These have been listed from I to VI as documented during the excavation.

<table>
<thead>
<tr>
<th>PACKAGE OF HUMAN REMAINS</th>
<th>NUMBER OF INDIVIDUALS</th>
<th>SEX-AGE</th>
<th>Stratigraphic unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td></td>
<td>Adult male 35-40 years</td>
<td>26</td>
</tr>
<tr>
<td>II-V</td>
<td>2</td>
<td>Adult female 30-35 years</td>
<td>46-47-48-53</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Child 3-4 years</td>
<td></td>
</tr>
<tr>
<td>III</td>
<td>1</td>
<td>Adult male 30-35 years</td>
<td>32-35-49-50</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Adult female 18-20 years</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Child 4-5 years</td>
<td></td>
</tr>
<tr>
<td>IV</td>
<td>1</td>
<td>Adult male</td>
<td>34-35-36-37-41</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Adult female</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Child</td>
<td></td>
</tr>
<tr>
<td>VI</td>
<td>1</td>
<td>Adult male</td>
<td>56</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Adult female</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>12</td>
<td>4 Adult males</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 Adult females</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 children</td>
<td></td>
</tr>
</tbody>
</table>

Table after preliminary results from Consuelo Roca de Togores (2016)
Grave Goods

Burials of the Chalcolithic period are usually accompanied by a "funerary trousseau", made up of objects placed next to the dead: ornate necklaces and pendants, ceramic vessels, knapped flint points and blades, adze hoes and axes of polished stone, copper/bronze instruments, bone or stone idols and other things which are not always easy to interpret, such as bones of animals that were perhaps the remnants of meat offerings.

Such grave goods were found in the Cova del Barranc del Migdia. There are pieces of symbolic value, offerings to natural forces or perhaps to gods, and objects to accompany and facilitate the passage of the deceased to the beyond. Carved flint arrowheads (thirteen in total) are abundant, always made using the technique of flat, invasive and continuous retouching, carried out using pressure which affects both sides of the piece. Other worked flint pieces are some microliths and flakes and a flake that could be a sickle tooth.

The most numerous and most fragmented pieces are ceramics. These are of various coloured vessels made with coarse clays containing abundant whitish temper and fired irregularly. In all cases, they appear to be middle-sized, more or less hemispherical in shape with a convex base. They are always open at the top, with a straight edge which is slightly curved inwards. Only one piece shows decoration. It is a fragment of the wall of a medium-sized vessel with three motifs painted in red on the outer surface. The motifs are only partially preserved but can be described as geometric, and reminiscent of the schematic angular motifs that decorate the walls of the adjoining chamber of paintings. These ceramic pieces would probably have contained milk or something similar to accompany the deceased and serve as a funeral offering.

Other singular pieces of grave goods were found less frequently: e.g. a small discoidal bead necklace, snails and pierced shells used as necklaces and several fragments of flat bone rods. Highlights are:

- the set of three axes of polished stone (two of diabase - an igneous rock) and the other in metamorphic stone.

- a small adze of polished white stone, possibly sillimanite (aluminium silicate rock).

- a small copper/bronze punch, only about 35 mm in length, with a pointed end and square in cross-section, and a small fragment of another.

As noted above, it is difficult to define and individualise each of the burials. However, some were marked with one or more blocks of unworked limestone which were placed next to or above the burial.
Social Background

The human beings that created and used this necropolis were from the Chalcolithic period (Copper Age), at the end of the Neolithic (New Stone Age), a broad phase that marks the end of the hunter-gatherer cultures and the emergence of agriculture and animal husbandry.

This extraordinary change began in the middle of the 6th millennium BCE in this region, while the Chalcolithic was in the 3rd millennium BCE, between approximately 2700 and 2000 BCE. Calibrated radiocarbon dates obtained on the human remains from the Migdia are placed between 2,670 and 2,250 BCE, a relatively recent chronology in comparison with other caves of multiple burials in the Valencian region.

The people who buried their dead in Cova del Barranc del Migdia focused their lives on agriculture, basically cereals (barley and wheat) and activities derived from the pasturing of sheep and goats. Their modestly-sized villages were in the valley near their crops. There is little archaeological evidence of these settlements; only some ceramic fragments and little else found in the Vall de Pexet. This is an archaeological site in the western part of the valley on a gentle hillside next to the Barranquera. The optimal conditions of this settlement meant it was occupied over a very long period, probably beginning in the Chalcolithic and lasting with interruptions in the late Iberian, Roman and Andalucian times. Some evidence of occupation from this period has also been found in the Vall de Castelló, about 1500 metres east of the previous site.

Few documented prehistoric burials from before the Chalcolithic period exist in the Valencian region. Moreover, those known are single or double burials. Collective necropolises in caves, which are characteristic of the Valencian Chalcolithic are found from this period on. This coincides with an increase in villages on flat areas, indicating significant population growth and a tendency towards sedentary life. The emergence of these new funeral rituals can be explained by the development of a sense of territoriality linking groups of farmers and herdsmen with their particular lands. The collective necropolis, where members of the group are laid to rest, perpetuates their connection to the territory.

At the same time, the similarity shown in the grave goods, with a repetitive array of objects as well as no differentiation between burials, suggests that the groups had few social differences, but a marked feeling of a common identity. This feeling of territoriality would have been reinforced by the set of schematic cave paintings. These are placed in a central and outstanding location in the valley, a unique point on the Montgó which has been connected to the rhythms of traditional agricultural society for generations. The ravine of Migjorn (or Migdia) works like a sundial that marked and continues to mark midday, as its name clearly indicates. Thus the cave used by those Copper Age people as a cemetery and symbolic space would be a recognisable marker of its connection to the valley and its surroundings.

There are other cave sites in the municipality of Xàbia where human remains have been found which should also be considered as burial caves. Almost all of these are located on the Montgó, the vast majority on the “solana” (sunny, southern side). The Cova del Montgó is important, being a site with a very extensive chronology. It seems to have been used in the Chalcolithic period as a collective necropolis and the remains of a minimum of 11 individuals have been recorded there.
Later occupations

Despite its hidden location and difficult access, or perhaps because of it, the Cova del Barranc del Migdia was occupied again many years after its use as a prehistoric necropolis. However, these were temporary, short occupations. The first was sometime in the Roman period, perhaps towards the 5th century BCE. There are few materials, only some fragments of an amphora of African origin and other fragments of every-day pottery. These came from the central chamber and were found in the superficial layers of the excavation.

The other time the cave was occupied was many centuries later, in Andalucian times, shortly before King Jaume I conquered this area. The most important finding from this period is a set of Almohad coins and other ceramic pieces, such as an almost complete turquoise enameled vase. It seems possible that at that time the cave served as a hiding place and maybe the cache was hidden just before the arrival of the feudal conquerors in 1244.

Reproduction (to scale) of a painting from the Cova del Migdia comprised of two pectiniforms, two stelliforms and a human shape. From exhibition in the Museu de Xàbia
Photo Christine Betterton-Jones
The archaeology of Cap Prim – preliminary report on the 2018 excavation campaign

Joaquim Bolufer Marqués, Museu de Xàbia and Marco Aurelio Esquembre, Arpa Patrimonio

Introduction

Cap Prim is a well-known site for archaeological research. The settlement has been known since the 1920s but reports did not ascribe any date or culture to it. In one of the earliest explorations, J.Senent (1929) described Cap Prim (which he calls Cabo de San Martin) as belonging to: "... the era of metals ...". Later investigations even spoke of the discovery of "fragments of Iberian and Roman ceramics", materials that might relate to the nearby island of Portitxol.

The location of the site is unique. It sits on the top and the slopes of Cap Prim, which is a geographical accident defining both the southern end of Xàbia bay and the northern limit of the small bay of Portitxol. This gives it a special relevance, with controlling views of the coast which make it an unbeatable situation in terms of marine routes and cabotage trade.

Surrounding Cap Prim are many rich archaeological sites from different times. The oldest remains are in the Cova de l'Or, a large cavity which spans the Cap Negre from south to north. Some remains found among its scrambled sediments are from the early stages of the Neolithic period, between the 6th and 5th millennia BCE. A few fragments of prehistoric handmade ceramics recovered in the Cova de la Mina are probably from a later time. This latter site is on the north face of Cap Negre, and is known through reports by J.Segarra (1985). There was another prehistoric settlement on the island of Portitxol which was probably linked to the settlement on Cap Prim, although most archaeological remains there are from the Roman era.

The surrounding seabed is also very rich in finds with amphoras and other materials, including Phoenician amphoras dating from the 8th to 7th centuries BCE. Numerous anchors in the Portitxol bay have been found mainly to the south-west of the island. Among these are examples of stone anchors which could be evidence of ancient maritime trade in this area.

2018 Excavation campaign

Cap Prim is the only one of these sites which has been studied archaeologically. The campaign in the autumn of 2018 was a short intervention focusing on three sample trenches of different sizes totalling approximately 37 square metres. They were all located on the top and flat part of the cape and on the north-east slope, between 50 and 60 metres above sea level.

Previous studies of materials picked up from the surface (many of which are now in the Xàbia Museum) as well as other characteristics, indicated that this was a Bronze Age settlement. This is a long historical period of the end of prehistory which occupies almost all of the 2nd millennium BCE. Some of the ceramics found in the site showed characteristics and decorations that made researchers
believe that the Cap Prim settlement had developed mainly during the later stages of that period, a stage known as the end of the Late Bronze Age in the second half of the 2nd millennium BCE.

The 2018 excavation campaign showed that materials from the end of the Late Bronze Age actually comprise a very small percentage of the Cap Prim archaeological record. It appears that occupation of the site during that period was at the final stage of the settlement, that is, corresponding solely with the upper or most superficial levels. These are precisely the strata most affected by erosion in which (at least in the currently excavated areas), no structures have survived. The first results also indicate that the settlement is more complex than anticipated. Its stratigraphic sequence is generally around one metre, which is important in enabling one to visualise room structures so that the urban layout can be assessed and studied.

The small area of the sample trenches and the short duration of the intervention has meant that it has not been possible to document the entire stratigraphic sequence of the excavated area, and this has prevented the identification of any part of the settlement. Numerous medium-sized blocks of limestone from walls and other structures, were revealed in the survey trenches, as well as fragments of adobe (blocks of mud, dried in the sun). These enable one to imagine buildings of stone block walls held together with earth, forming tallish wall bases which would have been built upon with adobe bricks. The excavation also found some fragments of mud plaster that would have covered the surfaces of walls and perhaps roofs.

**Finds**

In spite of the small area excavated, there were many finds. There are 440 inventoried pieces, including fragments of ceramics, lithic materials and molluscs (the terrestrial fauna, which is not very abundant, has not yet been catalogued). The most abundant finds are ceramics, consisting of a few closed forms (pots) and many more open forms (plates). Dishes, bowls, plates and pots are present; with some carinated pieces. Medium to large forms, probably storage or food containers were also recorded. There are many more turned-out rims than inverted (curved inwards) ones, and there are also many spherical or hemispherical shapes which are mostly ellipsoidal or semi-ellipsoidal on the vertical axis. Fragments of vessels carinated at the midpoint or at the top are noteworthy. The necks are turned out, cylindrical or constricted.

The most common decorations are nipples, tongues and various handles. However, some decorated fragments are particularly notable: an out-turned edge with Boquique (point and line) decoration on the lip and a fragment of jar with incised decoration forming a triangular motif on the neck enclosing a large number of dots. It is interesting that this CAPX19 UE 102.29 fragment fits together with another fragment (2338 A) now in the museum. These fragments would be part of jar 2.356 A, collected by J. Segarra the 1940’s, and showing typical ceramic decoration from the Cogotas I complex (an archaeological site in the province of Ávila). As for clays, they vary from gross textures to those with a small amount of temper and a much finer, smooth and burnished finish.

Other materials recorded include a large-sized flint sickle-tooth, stones and querns of hand mills, sharpeners, “allisadors” (smoothing tools made of volcanic rock), mollusc shell ornaments and mud
imprints from the remains of buildings or dwellings. One distinctive clay cone fragment is worth noting. It shows similarities to finds in the Orpesa la Vella (Orpesa, Plana Alta) and Cabezo Redondo (Villena, Alto Vinalopó) sites, which are of a very similar age.

Many barquiform hand mills for grinding grain were found. These pieces were scattered about or reused as building materials when they were no longer useful. The high concentration of mills and the presence of sickle teeth indicates that along with metallurgy and fishing, agriculture was a fundamental part of the economy.

Of the three survey trenches, only trench III (5 m²) was almost completely excavated, extending from the surface to the bedrock level. Two phases in the life of the settlement are documented here. The oldest phase sits on the natural bedrock where a possible base of a wall of limestone blocks with a south-west/north-east orientation was found which would have been associated with the earliest phase. The next phase, about 35 cm higher is marked by a layer of soil with two renovations, which showed clear evidence of having been exposed to intense fire. This was linked to the discovery of remains of what may have been a clay crucible for metal smelting. It seems that this very small floor could have been an area for metal-work on copper and/or bronze in the settlement and this might have been the site of a small smelting furnace. Two sandstone moulds used for casting bronze rods were also found in trench III as well as another mould from trench I which would have been used to manufacture similar pieces.

**Preliminary inferences**

As already noted, the location of the Cap Prim site would be key to its function at the end of prehistory. There are several pieces of evidence for the working and manufacture of metal artefacts, such as the moulds discovered in the 2018 excavation, and another collected by Segarra in the 1940s. There are also fragments of bronze and galena (lead ore) and other evidence described above. This suggests that the site could have been a point on the cabotage (maritime port to port) routes dedicated to the distribution and trade of metals. It was perhaps connected with other settlements that had a similar type of situation and characteristics, such as the Illeta dels Banyets (Campello, Alicante), or more distant places like Orpesa la Vella (Orpesa, Plana Alta).

The 2018 excavation contributed two radiocarbon datings (C14) collected in the lower levels of trench III. The samples are two fragments of carbon from two different levels, directly and indirectly related to the combustion structure that we think was an oven.

Beta-527584-CP18.UE308 3350 + BCE 1695-1600 Cal BCE (3.644-3.549) Cal BCE
Beta-527076-CP18.UE309 3470 + BCE 1694-87 Cal BCE (from 3.843 to 3.636) Cal BCE

These preliminary results place the excavation in the Late Bronze Age. The reference point for this cultural period are the Cabezo Redondo, the Illeta dels Banyets and Orpesa la Vella sites, the last two being particularly relevant because of their coastal situation.

It is important also to note that Cabezo Redondo and Orpesa la Vella, like Cap Prim, all appear to have had important metallurgical works.
The first data obtained from the 2018 campaign have confirmed the chronological horizon, and despite the fact that only a small surface area was studied, great complexity and an unexpectedly large stratigraphic sequence were found. The complexity of the structures as well as their sequence indicates that future campaigns will provide vital information about the Late Bronze Age, a cultural period which is fundamental for understanding recent prehistory.

The information presented above is composed of the preliminary results of the Cap Prim excavation combined with other reports and studies. An exhaustive study of the data collected in the excavation has now begun, with the examination of the few structures and the relatively large number of archaeological materials. These consist of lithic materials (flint sickle teeth, moulds, barquiform hand mills, etc.), fauna and molluscs, and especially numerous ceramics which have a great variety of design typical of the Bronze Age period.

The preliminary study defines two possible chronological phases. The first, around the end of the Late Bronze Age, is poorly represented. It is characterised by carinated ceramics and some fragments with incised and imprinted decorations. These are associated with the surface levels of the site which have been badly affected by erosion and where there are no conserved structures (at least not in the presently excavated sectors). The second phase has ceramics which are less varied in form without decorated motifs (so far), indicating a possibly older chronology.


— (2004b): “Tretze anys d’arqueologia urbana a la vila de Xàbia” Xàbiga 8, Xàbia.


— (2014): “La esfera de Cova Foradada (Xàbia, Marina Alta), un objeto singular de los inicios del paleolítico superior”. Quaderns de prehistòria i arqueologia de Castelló, núm. 32, pàgs. 5-12. Castelló


Glossary
(From Quaderns 3, Wikipedia and other on-line resources)

Abri: Rock shelter, overhanging portion of a cliff creating a bowl-shaped shelter.

Anthracology: (from anthrax (ἄνθραξ), the Greek word for coal) the analysis and identification of charcoal which is preserved after carbonisation, based on wood anatomy. The remains of carbonised wood come from archaeological sites and sediments, and may yield evidence of natural or anthropogenic paleo-fires. Anthracological studies are also applied to extant material, such as the inspection of charcoal of illegal provenance.

The Argaric culture: named from the type site El Argar near the town of Antas, in what is now the province of Almeria in southeastern Spain, is an Early Bronze Age culture which flourished between c. 2200 BC and 1550 BC.

The Aurignacian: culture dates from the Upper Palaeolithic and is the first European culture of modern humans lasting from 43,000 to 26,000 BP, the people being known as Cro-Magnons. The Aurignacian tool industry is characterised by worked bone or antler points with grooves cut in the bottom. Their flint tools include fine blades and bladelets struck from prepared cores rather than using crude flakes. The people of this culture also produced some of the earliest known cave art.

Aurochs: also known as urus or ure (Bos primigenius), an extinct species of large wild cattle that inhabited Asia, Europe, and North Africa. It is the ancestor of domestic cattle. The species survived in Europe until 1627, when the last recorded aurochs died in the Jaktorów Forest, Poland.

Barquiform mill: Prehistoric hand mill for grinding grain composed of a flat, or bowl-shaped lower quern stone, and rounded hand-stone.

Bell beaker: (Campaniform: bell-shaped) The Bell Beaker or Beaker culture, an archaeological culture named after the inverted-bell-shaped drinking vessel used at the very beginning of the European Bronze Age. Arising from around 2800 BC, and lasting in continental Europe until 2300 BC. The culture
was widely scattered throughout Western Europe, from various regions in Iberia and spots in northern Africa to the Danubian plains, the islands of Great Britain and Ireland, and also the islands of Sicily and Sardinia.

**Bell Beaker Transition Horizon:** called the “Horizone de Campaniforme de transición” or HCT in Spanish. This period was basically defined as a phase of change in Neolithic economic and social structures before the Bronze Age. (Eds note: there is much controversy about this)

**Backed edge blades:** Flint tools which have one of the edges, generally a side one, rounded or chamfered by abrupt retouching.

**Blades:** chipped stone tools which are always at least twice as long as they are wide with sharp edges on the long sides.

**Boquique:** or point and line ceramics, the name given to a set of prehistoric pottery found in the Iberian peninsula, the Balearic Islands and some sites in Central Europe. The superficial “dot and line” pattern that characterises this decorative technique which was achieved by stippling with a punch or some type of serrated saw, making small and successive strokes along a continuous incised line, giving the appearance of sewing.

**Burin:** A scraper with a steeply notched cutting edge.

**Cabotage:** the transport of goods or passengers between two places in the same country by a transport operator from another country. It originally applied to shipping along coastal routes, port to port.

**Campaniform:** bell-shaped. Ceramic vessels typical of the Bell Beaker culture

**Cardial decorations:** indentations made in the clay of ceramic vessels using the ridges of cockle shells (Cardium).

**Carinated:** a shape in pottery, glassware and artistic design usually applied to amphorae or vases. The shape is defined by joining a rounded base to the sides of an inward sloping vessel.

**Chalcolithic:** also Eneolithic or Copper Age, the transitional period between the Neolithic and the Bronze Age. It is taken to begin around the mid-5th millennium BCE, and ends with the beginning of the Bronze Age proper, in the late 4th to 3rd millennium BCE, depending on the region. In the context of Eastern Europe, archaeologists often prefer the term "Eneolithic" to "Chalcolithic" or other alternatives.
Context: the place where an artifact is found, Not just the place but the type of soil, the site type, and what the artifact was found with or in relation to.

Denticulates: flint scrapers with teeth, that is to say, small notched edges that protrude out.

Dufor Bladelet: Small flint bladelets with semi abrupt alternating retouching along one or both sides. (see right).

Epipalaeolithic: the period of the last hunter-gatherers in areas far from glaciers at a time when the stable climate of the Holocene was developing. This was just before the advent of agriculture (around 10,000 - 7000 BP). Stone tools are characterised by an abundance of very small flint flakes (microliths) which were used to form the points of hunting weapons, such as spears and (in later periods) arrows etc. They were combined with wood, bone, resin and fibres to form a composite tool or weapon. An average of between six and eighteen microliths may often have been used in one spear or harpoon, but only one or two in an arrow. There are different styles of microliths from different geographical areas.

The Epipalaeolithic has also been defined as the “final Upper Palaeolithic industries occurring at the end of the final glaciation which appear to merge technologically into the Mesolithic”. The period is generally dated from c. 20,000 BP to 10,000 BP in the Levant, but later in Europe 5,000 BP or even later.

Industrial complex: Archaeologists classify prehistoric stone tools into industries (also known as complexes or technocomplexes) which share distinctive technological or morphological characteristics. The study of such tools is known as lithic analysis. This classification provides pointers as to how prehistoric human cultures developed.

Lo Rat Penat (the bat): a Valencian cultural society, founded in 1878 at the initiative of Constantí Llombart, it was dedicated to the promotion, defence, teaching and dissemination of the Valencian language and culture.

Facies: Any subgroup of elements within an industry or main culture tradition that is distinguished from the whole on the basis of some aspect of appearance or composition. A major division of a cultural sequence, such as the Mousterian culture of the European Palaeolithic, is often described as having different facies - for example, the Quina Mousterian or the Mousterian of Acheulian tradition - though these may reflect different industries or cultures.

Flake: fragment obtained by hitting the (often flint) core with lump of stone.

Floral Games: were any of a series of historically related poetry contests with floral prizes. In Occitan, their original language, and Catalan they are known as Jocs florals (Catalan: ['ʒɔks fluˈɾals]; modern Occitan: Jòcs florals ['dʒɔksəs fluˈɾals], or floraus [fluˈɾaws]). The original contests may have been inspired by the Roman Floralia (Ludi Floreales) held in honour of Flora.

Geminate vessel: As its name indicates, this type of container is characterised by being in pairs, with the vessels being made separately and later joined by the potter.

Geometric microliths: are a clearly defined type of stone tool, at least in their basic forms. They can be divided into
trapezoid, triangular and lunate (half-moon) forms, although there are many subdivisions of each of these types.

The Gravettian: an archaeological industry of Homo sapiens during the European Upper Palaeolithic. It succeeded the Aurignacian around 33,000 years BP. It is archaeologically the last unified European culture, and had mostly disappeared by c. 22,000 BP, close to the maximum of the Last Glacial Period although some elements lasted until around 17,000 BP. At this point, it was replaced abruptly by the Solutrean in France and Spain, and developed into or continued as the Epigravettian in Italy, the Balkans, Ukraine and Russia. Gravettian culture is known for its Venus figurines, which were typically made as ivory or limestone carvings. The Gravettians were hunter-gatherers who lived in a bitterly cold period of European prehistory. They thrived in their ability to hunt animals including deer and mammoths. This culture was first identified at the site of La Gravette in Southwestern France.

Holocene: the current geological epoch. It began approximately 11,650 cal years before present, after the last glacial period, which concluded with the Holocene glacial retreat. The Holocene and the preceding Pleistocene together form the Quaternary period.

Archaeological horizon: (plural archaeological horizons) A common set of artefacts that identifies a culture and is found disseminated widely (usually over a number of sites, but sometimes widely over one site) but restricted to a single stratum; a layer or stratum.

Macro-schematic art: Large rock paintings, usually in red, in a figurative style in which only the basic fragments of each figure are represented as outlines. A characteristic figure is the “orant” a human figure with both arms upraised as if in prayer. Found in Alicante province.

Magdalenian: (16,000 – 10,000 BP, Upper Palaeolithic) Culture at the end of the last glaciation. characterised by a cold and dry climate, humans living in association with reindeer, and the extinction of the mammoth. The use of bone and ivory as implements increased, making the period essentially a bone period. Bone instruments are quite varied: spear-points, harpoon-heads, borers, hooks and needles.

The fauna of the Magdalenian epoch seems to have included tigers and other tropical species along with reindeer, blue foxes, Arctic hares, and other polar creatures.
**Material culture:** the aspect of social reality grounded in the objects and architecture that surround people. It includes the use, consumption, creation, and trade of objects as well as the behaviours, norms, and rituals that the objects create or take part in.

**Mesolithic:** (Greek: μέσος, mesos "middle"; λίθος, lithos "stone") the period between the Upper Paleolithic and the Neolithic. The term *Epipaleolithic* (see above) is often used synonymously, especially for outside northern Europe, and for the corresponding period in the Levant and Caucasus.

A *microlith*: a small stone tool usually made of flint or chert and typically a centimetre or so in length and half a centimetre wide. They were made by humans from around 35,000 to 3,000 years ago, across Europe, Africa, Asia and Australia. The microliths were used in spear points and arrowheads.

**Microlithism:** use of very small flint flakes to make tools.

**microlaminar:** microliths which are slightly larger than the geometric microliths that followed. Made from the flakes of flint obtained ad hoc from a small nucleus or from a depleted nucleus of flint. They were produced either by percussion or by the application of a variable pressure.

Los Millares: a Chalcolithic occupation site 17 km north of Almería, in the municipality of Santa Fe de Mondújar, Andalucía, Spain. The complex was in use from the end of the 4th millennium to the end of the 2nd millennium BCE and probably supported somewhere around 1000 people. It was discovered in 1891 during the construction of a railway. It was first excavated by Luis Siret in the succeeding years. Excavations are ongoing.

**The Mousterian:** a stone tool industry associated mainly with the Neanderthals. It lasted roughly from 100,000 to 40,000 before the present (BP) during the Middle Stone Age (Palaeolithic). It is characterised by use of the Levallois stone knapping technique to produce small, sharp, knife-like tools as well as scrapers. Also known as the "prepared core technique," flakes are struck from worked cores and then subsequently retouched.

**Neanderthals:** Homo Neanderthalensis or (Homo sapiens neanderthalensis), is an extinct species or subspecies of archaic humans which lived in Eurasia until about 40,000 years ago.
The Neolithic (New Stone Age): the period when the first signs of farming appeared. There was a series of behavioural and cultural changes, including the use of wild and domestic crops and domesticated animals. These changes developed in the Middle East around 10,000 BCE and moved south-east to north-west at about 1 km/year. This “Neolithic Expansion” arrived in Spain about 5000-6000 BCE (Before the Current Era). This period sees the introduction of ground and polished stone tools.

Neolithisation: conversion to a Neolithic form (culture, DNA etc).

The Palaeolithic: also called the Old Stone Age, a period in human prehistory distinguished by the original development of stone tools that covers c. 99% of the time period of human technological prehistory. It extends from the earliest known use of stone tools by hominins c. 3.3 million years ago, to the end of the Pleistocene c. 11,650 cal BP.

Percussion flaking: the shaping of a stone implement by striking or chipping off flakes with another stone or a piece of wood, bone, or antler.

The Pleistocene: (often colloquially referred to as the Ice Age) the geological epoch that lasted from about 2,580,000 to 11,700 years ago, spanning the world's most recent period of repeated glaciations. The end of the Pleistocene corresponds with the end of the last glacial period and also with the end of the Paleolithic age used in archaeology.

Pressure flaking: consists of applying pressure by means of a pointed stick or bone near the edge of a flake or blade, to detach small flakes from both sides. This method was used mostly to put the finishing touches on tools…

Sequence: a method of placing a group of similar objects into a chronological sequence, taking into account stylistic changes that occurred over time.

Sgraffito: in pottery, a decorative engraving technique that consists of drawing designs on a vessel with a sharp tool by making scratches and incisions on the wet clay, or scratching the surface when dry or fired. It is one of the most primitive decoration techniques.

Solutrean: industry in which tool makers employed techniques not seen before and not rediscovered for millennia. The culture developed in the Upper Palaeolithic, towards the end of the Last Glacial Period, (known as the Würm Glaciation in the Alps) Solutrean tools have relatively finely worked, two-sided points made with reduction percussion and pressure flaking rather than cruder flint-knapping. Stone tooling was done using antler batons, hardwood batons and soft stone hammers.
This method enabled the working of delicate slivers of flint to make light projectiles and even elaborate barbed arrowheads, some with shanks. Other characteristic implements of this industry are large thin spearheads; scrapers with the edge on the end rather than on the side; flint knives and saws, which are all chipped and not ground or polished; long spear-points, with shank and shoulder on one side only and blades in the shape of laurel or willow leaves. Bone and antler were used as well. The Solutrean takes its name from the Crôt du Charnier site in Solutré-Pouilly, in Saône-et-Loire.

**Stratigraphy:** in archaeology, the study of layers of sediments. Archaeologists assume that sites undergo stratification over time, leaving older layers beneath newer ones.

**Temper:** in ceramics, a non-plastic material added to clay to prevent shrinkage and cracking during drying and firing of vessels made from the clay.

The **Upper Palaeolithic:** (Late Stone Age) the third and last subdivision of the Palaeolithic or Old Stone Age. Very broadly, it dates to between 50,000 and 10,000 years ago (the beginning of the Holocene), according to some theories coinciding with the appearance of behavioural modernity in early modern humans, until the advent of the Neolithic Revolution and agriculture.

The **Urnfield culture:** (c. 1300 BC – 750 BC) a late Bronze Age culture of central Europe, often divided into several local cultures within a broader Urnfield tradition. The name comes from the custom of cremating the dead and placing their ashes in urns which were then buried in fields.

**Use-wear analysis:** a method in archaeology to identify the functions of artifact tools by closely examining their working surfaces and edges. It is mainly used on stone tools, and is sometimes referred to as "traceological analysis" (from the neologism traceology).

**Würm glaciation:** the Last Glacial Period as it affected the Alps and (in some accounts) the Pyrenees.

**Zoomorphic:** in the form of an animal