Pioneering Belgium prehistorian
The work of Philippe Charles Schmerling – page 8

A milestone in research
Neanderthal discovery in Croatia celebrates 120 years – page 10

Preventive Conservation
Managing the preservation of Spain’s famous rock art – page 16

1 Million Years Of Humans In Britain
Guest contribution by Mark Lewis and Chris Stringer, London – page 6
Welcome to the third edition of the Ice Age Europe magazine!

We are happy to present the new issue, which showcases the many activities taking place in research and conservation, exhibition, education and communication at the Ice Age Europe member sites. In addition, we are pleased to present a special guest contribution by Mark Lewis and Chris Stringer, Natural History Museum London, giving an overview of the early human occupation of Britain (pp 6–7).

The Ice Age Europe network represents 20 archaeological sites with rich Ice Age heritage and their affiliated museums or visitor centers as well as research institutions across 7 European countries. At these sites, over 350 personnel are dedicated to the promotion of our common heritage – as scientists, managers, curators, educators or guides. The sites, among them many World Heritage sites, attract close to 2 million visitors per year from Europe and overseas. On page 5 you will find a brief overview of some of the recent network activities.

You can follow the network and our members at @IceAgeEurope on Twitter, Facebook and Instagram. If you are interested in becoming a member, a partner or have a press inquiry please contact our network office.

We hope you enjoy reading!

Dr. Bärbel Auffermann
Chair of the Ice Age Europe Network
Director of the Neanderthal Museum, Germany
CONTENTS

RESEARCH AND CONSERVATION
The human occupation of Britain over the last one million years .......................... 6
Mark Lewis, Chris Stringer / Natural History Museum, London, UK

Wallonia – a cradle of Prehistory ........................................................................ 8
Fernand Collin / Préhistomuseum, Belgium

120 years of Krapina Neanderthals .................................................................... 10
Jurica Sabol / Krapina Neanderthal Museum, Croatia

50th anniversary of Ekan’s discovery ................................................................... 12
Team of Ekanberi / Ekaïmberi – The Replica of the Ekain Cave, Spain

Beyond the MUSE – Museo delle Scienze: Research on the Late Palaeolithic site of Cornfessosa Rock Shelter reveals unique evidence of bear hunting .......... 14
Rossella Buches, Elisabetta Flor / MUSE – Museo delle Scienze, Italy

The cave of Altamira and its preventive conservation plan ................................. 16
Alfredo Prada Freixedo / Museum of Altamira, Spain

Underground Mapping ......................................................................................... 18
Nick Powe / Kents Cavern Prehistoric Caves, UK

CENIEH as provider of paleoanthropological and geochronological datasets for the ARIADNEplus project ......................................................... 20
Joseba Rios-Ibarraiz, María Isabel Sarró Moreno, Cecilia Calvo Simial, Mohamed Sahnouni / National Center for Research on Human Evolution (CENIEH), Spain

MAP OF LOCATIONS .......................................................................................... 22

EXHIBITIONS
Climate changes in history: An Arkeologi Museoa Exhibition (Bizkaia, The Basque Country) ......................................................... 24
Iñaki Garcia Camino / Arkeologi Museoa - Santamantinie. Bizkaiko Foru Aldundia, Spain

Our mammoth – a giant now and then. A special exhibition at Vogelherd ............ 26
Ewa Dutkiewicz / Archaeopark Vogelherd, Germany

EDUCATION AND COMMUNICATION
Gibraltar, Neanderthals, and the Calpe Conference ............................................. 28
Alex Menez / The Gibraltar National Museum, UK

The future of the Neanderthal Museum: Of, by and for all ................................... 30
Bärbel Auffermann / Neanderthal Museum, Germany

8,000 grandmas ago ............................................................................................. 32
Barbara Bussola, Nicolò Jacopo Camilloni, Anita Gubbioi / Fumane Cave - Homo 3.0, Italy

Speleology – experience and adventure serving scientific research ................... 34
Barbara Speer, Hannah Wiedmann / Museum of Prehistory Blaubeuren, Germany

Prehistory for all .................................................................................................... 36
Véronique Simbille / The Museum of Neanderthal Man La Chapelle aux Saints, France

Treasure hunting at the paléon ............................................................................ 38
Jana Hugler / paléon - Research and Experience Centre Schöningen Spears, Germany

NEWS FROM ICE AGE EUROPE – NETWORK OF HERITAGE SITES

Ice Age Europe welcomes Bärbel Auffermann as new lead partner

In December 2018, Prof. Dr. Gerd-Christian Weniger, director of the Neanderthal Museum, founder and lead partner of the network Ice Age Europe, retired. The network is grateful for the many years of successful cooperation under his leadership. In January 2019, his long-term Deputy Director Dr. Bärbel Auffermann took over his position and thus became the new lead partner of the network.

Bärbel Auffermann studied prehistory, geology and anthropology at the universities of Münster and Tübingen (Germany). She has been working at the Neanderthal Museum since 1995 and was actively involved in designing and realizing the new museum, which became one of the most important and successful archaeo-

logical museums in Germany. In this role, she also actively partic-

ipated in the founding and the development of the network Ice Age Europe since the very beginning.

One of her many aims is to further advance the project of the serial transnational nomination of the Neanderthals sites as UNESCO World Heritage and the revaluation of the famous Neanderthal discovery site in the coming years.

EUROPEAN ARCHAEOLOGY DAYS 14-16 JUNE 2019

Ice Age Europe is a proud partner of the first European Archaeology Days from 14 to 16 June, coordinated by the French National Institute for Archaeological Research (INRAP). The event will mobilise the entire archaeological community in all European countries. The Archaeology Days are dedicated to promoting and spreading knowledge about research, collections and heritage in archaeology. The main purpose of this event is to bring in new audiences not yet familiar with archaeology.

On these days, all kind of activities are offered: from museum “open house” events, workshops for families, conferences, demonstrations, archaeological site tours, open house dig sites and much more. Find out about the programme here www.journées-archeologie.fr.

ICE AGE EUROPE DAY 22 SEPTEMBER 2019

On Sunday 22nd of September 2019, the Ice Age Europe network members will again invite everybody to celebrate our common Ice Age heritage on #IceAgeEuropeDay! Last year, many visitors followed the invitation and discovered one of the most fascinating epochs of human history, using all their senses: From Ice Fest at Kents Cavern (UK), film workshops in Grotta di Fumane (Italy), concerts in Altamira (Spain), a treasure hunt at the palaeon (Germany) to culinary discoveries at MUSE (Italy).

One of the most exciting and exciting ways to celebrate the Ice Age is a photo competition. This year we launched our first international photo competition in cooperation with and as part of the CEWE Photo Award 2019 "Our World is beautiful" (open for submissions until 31 May 2019 at www.context.cewe.de/cewephotoaward_en_gb/ice-age-europe). We invite everybody to share what they find the most interesting about the Ice Age, where you might find traces today, or to reflect on the biggest differences. By entering, participants will automatically take part in the international CEWE Photo Award 2019.

The 40 best Ice Age Europe submissions to the photographic competition will be included in an exhibition that will tour Europe from autumn 2019 onwards.

INTERNATIONAL ICE AGE EUROPE PHOTO COMPETITION

FEBRUARY TO MAY 2019

This year we launched our first international photo competition in cooperation with and as part of the CEWE Photo Award 2019 "Our world is beautiful" (open for submissions until 31 May 2019 at www.context.cewe.de/cewephotoaward_en_gb/ice-age-europe). We invite everybody to share what they find the most interesting about the Ice Age, where you might find traces today, or to reflect on the biggest differences. By entering, participants will automatically take part in the international CEWE Photo Award 2019.

The 40 best Ice Age Europe submissions to the photographic competition will be included in an exhibition that will tour Europe from autumn 2019 onwards.

TOURING EXHIBITION #ICEAGEEUROPENOW

Since 2017, our outdoor photo exhibition has been installed in public areas across Europe to share our common heritage and fascination of the era of the Ice Age, which left so many traces that shape us today. Venues 2019 include the Commonwealth Park in Gibraltar, hosted by our member Gibraltar National Museum, and the Préhistomuseum, our Belgian network member.

More news online at www.ice-age-europe.eu/learn-and-discover/networknews.html
THE HUMAN OCCUPATION OF BRITAIN OVER THE LAST ONE MILLION YEARS

Authors: Mark Lewis and Chris Stringer, Natural History Museum, London, UK

Since 2001, scientists from a variety of disciplines and institutions, led by Chris Stringer at the Natural History Museum and Nick Ashton at the British Museum, both in London, have been working on further understanding the Pleistocene history of human occupation in Britain. The main objectives include assessing human presence and absence, major changes in technology, and how these relate to major changes in climate, environment and geography that occurred during this time. The projects have investigated the peopling of Britain from the earliest records to the transition to the present interglacial.

The earliest inhabitants of Britain, a record now extending back nearly a million years. The work continues and there are no doubt many more surprises to come.

A flake with denticulated edge from Pakefield, Suffolk (photo NHM) 
Artist’s reconstruction of Site 3 at Happisburgh, Norfolk  
Excavations at Barnham, Suffolk, in 2018 (photo: Jodie Mansfield)

about 12 thousand years ago (kya), and results have been, and still are, far-reaching, culminating in a large number of publications as well as workshops and conferences. Three sites from the Early and Middle Pleistocene are of particular interest.

Around 1.8 million years ago, early humans expanded their range beyond Africa and began to increase the variety of environments they inhabited. Until recently, such early colonisation of Europe was not thought to have reached beyond the Pyrenees or the Alps, but a number of discoveries in East Anglia show that the Clactonian culture preceded the Acheulean (Acheulean) and non-handaxe (Clactonian). Whether this was the result of two separate colonising groups, or the same group using different technologies for different purposes in distinct areas, was a major conundrum. Recent work has answered this, placing the main horizon of human presence at the end of an interglacial in Marine Isotope Stage (MIS) 21 (~866-814 kya) or 25 (~970-936 kya), still by far the oldest known evidence in northern Europe. The results were published in Nature in 2010.

Recently, focus has shifted to an inland site, Barnham in Suffolk, dating to about 400 kya (MIS 11). Work at this site in the last century identified two different lithic technologies, handaxe (Acheulean) and non-handaxe (Clactonian). Whether this was the result of two separate colonising groups, or the same group using different technologies for different purposes in distinct areas, was a major conundrum. Recent work has answered this, showing that the Clactonian culture preceded the Acheulean culture, suggesting initial colonisation by one group of hominins, followed by a later group with handaxes. Large quantities of burnt flint have also been found at Barnham, although whether from natural forest fire or the controlled use of fire by humans is unclear. Some of the earliest evidence of human fire use in Europe had already been found at nearby Beeches Pit, also dated to about 400 kya, and therefore current research is focusing on understanding and interpreting this evidence. A final aim at Barnham is a detailed assessment of the diverse environmental data recovered; it is one of the richest sites in Britain for amphibians and reptiles, with exotic species such as tree frogs and European pond terrapins, along with extinct species of rhinoceros and elephant. Excavations continue and palynology currently suggests the site dates from the earlier part of the interglacial.

Over the last 20 years, new excavations have revealed exciting information about the earliest inhabitants of Britain, a record now extending back nearly a million years. The work continues and there are no doubt many more surprises to come.

Chris Stringer is a Research Leader in the Centre for Human Evolution Research and co-director of the Calleva-funded Pathways to Ancient Britain (PAB) project, at the Natural History Museum, London.

Mark Lewis is a researcher and palynologist on the PAB project.

More information  

Further reading  

“Over the last 20 years, new excavations have revealed exciting information about the earliest inhabitants of Britain, a record now extending back nearly a million years. The work continues and there are no doubt many more surprises to come.”
WALLONIA – A CRADLE OF PREHISTORY

Prehîstomuseum, Belgium / Author: Fernand Collin

In September 1829, armed with a shovel and a pickaxe, he enters a cave in the small village of Chokier (Flémalle-Liège). His purpose: to explore the cave and excavate fossil animals in order to understand the mystery of their origins.

During the winter of 1829/30, in this steep valley between the districts of Engis and Flémalle, in the Engis cave, also called “Trou Caûer”, Schmerling excavates two human skulls surrounded by bones of extinct animal species, mingled with flints and bones carved by human hands!

After he had excavated about sixty caves in the Liège region, Philippe-Charles Schmerling published the first monograph integrating animal palaeontology, human palaeontology, prehistorical archaeology and paleopathology (two volumes of respectively 167 and 199 pages, including 34 and 40 plates). In these two volumes he considered all the data, confronted his observations and his right to express our views so unconditionally, and today no geologist worth his salt would ever maintain that man did not exist at the times when our caves were filled with the loess and fossils they now contain.” (Schmerling, 1833, vol 1, page 179)

The scientific elite postponed the collegial recognition of the existence of a fossil man for another thirty years.

The Engis site – the “Schmerling valley” – has just been registered by the Walloon government on the national UNESCO World Heritage tentative list as it was the birthplace of one of the major scientific revolutions in the history of humanity: the recognition of fossil men.

The “Schmerling valley” was also the exceptional witness to the birth of a new scientific discipline which would become Prehistory. And it is also the place where the first Neanderthal man was excavated, the scientific story of which gives a vivid illustration of the slow mutation of western society’s cosmogony. It is a place well chosen to meditate on the meaning of our human existence, a patrimonial sanctuary suitable to a philosophical reflection on the position of science in our society.

Less than a kilometre as the crow flies from the “Schmerling valley”, on the other side of the Meuse river, the Ramioul cave has also offered many clues as to the existence of these extinct species and of the life of our ancestors.

This is the site chosen by the group “Les Chercheurs de la Wallonie” (“Researchers of Wallonia”) and the district of Flémalle to lay the foundations of the Préhistomuseum. With its various exhibitions, outdoor experiences, workshops led by archaeologists, the “Prehistory park of adventures” invites visitors to go back to their roots in 30-hectare forest. Most of all, from the terrace of the Ramioul cave, one might get a stirring of the “Schmerling valley” where the first ever discovered Neanderthal lived! This profound geographical link strengthens the crucial part played by Schmerling and his multitudinous discoveries in the research and cultural mediation projects of the Préhistomuseum.

Day in day out the museum allows each and every one to experience our humanity by the encounter with our heritage, prehistory and archaeology.

The ‘Schmerling valley’ was the exceptional witness to the birth of a new scientific discipline which would become Prehistory.”
120 YEARS OF KRAPINA NEANDERTHALS
Krapina Neanderthal Museum, Croatia / Author: Jurica Sabol

On a historic day, August 23rd 1899, Dragutin Gorjanović-Kramberger, the director of the Geological and Paleontological Department of the National Museum came to Krapina. He was invited by the Mayor Vilibaldo Sluga to study strange findings at the bottom of Hušnjakovo Hill, near Kneipp Spa. With a more detailed analysis of the yellow Miocene sandstone deposits, about 8 meters high, Gorjanović discovered the ash and stingy sand, stone tools and remains of animal bones. It was a human molar that provided him with confirmation that this was the site of an ancient human occupation. During systematic excavations works and research that lasted from 1899 to 1905, Dragutin Gorjanović-Kramberger collected about 900 human fossil remains of about 70 individuals of different ages and gender, making the Hušnjakovo site the largest single collection site of Neanderthals in the world. According to fossil bones the average age of Neanderthals was 13 to 14 years, while the oldest one was about 27 years old. Beside the human fossil bones, Gorjanović-Kramberger collected about 1,200 pieces of stone tools (Mousterian type) and over 2,300 animal bones from cave bear, wolf, elk, giant deer, woolly rhinoceros, wild buffalo and leopard.

Evidence of use of fire and burned bones proves Neanderthals had controlled use of fire and roasting meat. There are about three hundred skull and jaw bones in the Krapina collection and nearly four hundred other human bones. In addition to the famous skulls (Krapina 1, 2, 3, 4, 5), skull fragments are represented by remains of forehead, head and neck bones, and the collection is rich in hearing bones. The other remains in the collection are: 61 vertebrae, 56 ribs, 22 blades, 15 clavicle, 21 bones of upper arm, 30 forearm and 58 hand bones. There are also pelvic bones, thigh bones, knee and foot bones. Krapina Neanderthals lived in the period of interglacial (Riss – Würm) and are counted among the older Neanderthals of Europe. Scientific research and professional processing of the collection, which has lasted for almost 120 years, is constantly coming up with new discoveries and data. Osteological analyses found the earliest cuts in the amputation of the right forearm, healing of severe head injuries and recovery from the coma. Frequent bone disorders such as arthritis, osteopenia, periostitis, sclerosis, and bone cancer are evidence of the severe and very stressful life of the first inhabitants of Krapina.

The most important finding of the Krapina collection is Krapina 3 or the skull C – a skull belonging to a young, mature Neanderthal woman. It is interesting because of thin and shallow cutmarks (in total 42) found on the fore part of the skull or frontal bones, suggesting possible ritual behaviours by Neanderthals. Also, recent research of the claws of the eagle from the Krapina collection revealed that Neanderthals were making jewels, suggesting that they had the capability for a much more complex, symbolic way of thinking than was previously thought.

A body of knowledge of the Krapina early man is presented in the permanent exhibition of the Krapina Neanderthal Museum, which, along with numerous castings and copies of findings and multimedia installations, also contains reconstructions that are part of the largest diorama of Neanderthals in the world. The permanent exhibition of the museum is a kind of time machine that leads visitors from the distant past of the Earth to modern times, emphasizing the significance of Krapina Neanderthals and the place of its discovery, Hušnjakovo site. The Hušnjakovo site is the first protected paleoentontological monument of nature in Croatia, established in 1961. The Krapina Neanderthal Museum has around 90,000 visitors per year and is one of the most visited museums in Croatia and in this part of Europe. The importance of this unique site was recognized by the European Commission, awarding the European Heritage Label to the site and museum in March 2016.

The Hušnjakovo site today

Scientific research and professional processing of the collection, which has lasted for almost 120 years, is constantly coming up with new discoveries and data.

ABOUT THE KRAPINA NEANDERTHAL MUSEUM, CROATIA
The Krapina Neanderthal Museum is located right next to the Hušnjakovo site, the world’s richest excavation site, where the largest number of Neanderthal fossil bones has been found. Besides visiting the permanent exhibition visitors can participate in educational programs, special exhibitions, lectures, concerts, performances and numerous other events.

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Ekain’s paintings are outstandingly well-preserved. Ekain cave, located in Deba, contains around 70 animal figures, of which 64 are painted and 6 engraved. Horses are the animals that are featured the most. The set of horses is one of the richest and most beautiful examples of Franco-Cantabrian art and it is considered the finest wall painting of its type. The animal figures at Ekain also include bears, cows, and goats. The cave is divided into different gallery that nobody had been in for thousands of years. When turning their heads around, they stumbled upon what the French archaeologist André Leroi-Gourhan called "the ensemble of the most perfect horses in Quaternary art".

The news was immediately shared with the Society of Sciences Aranzadi, led by José Miguel Barandiaran and his team, which carried out the excavation works between 1969 and 1975. During this time, an inventory of the rock art representations was made, their chronology was defined as to belong to the Higher Magdalenian period (13,000-14,000 years ago) and the traced drawings of the paintings found were painted. The logo of this 50th anniversary is actually based on these traced drawings. The logo of this 50th anniversary is actually based on these traced drawings which, therefore, also turn 50 this year.

Ekain Foundation has planned a variety of events to commemorate the 50th anniversary. The main event will be taking place on 7th June 2019 at the María Cristina theatre in Donostia-San Sebastián. It will be an event to pay tribute to the most representative people and institutions involved in Ekain’s discovery and research; there will be a mix of video documentaries, music, dance and short talks. A book is also planned to be published within the commemoration events, as well as an exciting itinerary exhibition about the traced drawings. Ekainberri will organize and take part in many other events throughout the year. Highlights include the Kobaz Koba Trail running race (10th February), exclusive visit to Dantobilinzu cave (Zestoa) with rock art paintings within the Month of the Basque Coast Museums (18th March), X Ekainfest Day with prehistoric Olympic Games and local gastronomy tasting (8th June). Ekainberri will also be present at other international day celebrations and Ice Age Europe network’s two annual meetings in March and October.

Ekainberri is an exceptional work of cave art from the Paleolithic period. Artistic creations by Paleolithic hunter-gatherers have been discovered around the world, and yet the specimens found here on the Cantabrian coast of Europe, known as Franco-Cantabrian cave art, are the most prolific. Ekain is considered the finest example of cave art in the Basque Country. The museum of Ekainberri, located 600 meters from the original cave, presents reproductions of 85% of the art found in Ekain. Ekainberri offers an extraordinary adventure for visitors as they lose consciousness of spatial boundaries and walk through the cave discovering the magnificent paintings and creations.

Ekain is an exceptional work of cave art from the Palaeolithic period. Artistic creations by Palaeolithic hunter-gatherers have been discovered around the world, and yet the specimens found here on the Cantabrian coast of Europe, known as Franco-Cantabrian cave art, are the most prolific. Ekain is considered the finest example of cave art in the Basque Country. The museum of Ekainberri, located 600 meters from the original cave, presents reproductions of 85% of the art found in Ekain. Ekainberri offers an extraordinary adventure for visitors as they lose consciousness of spatial boundaries and walk through the cave discovering the magnificent paintings and creations.

Ekain’s entrance passageway - Zaldei, © Ekainberri - Caperochipi

Ekain’s great Panel - Zaldei, © Ekainberri – Caperochipi

Ekain’s entrance passageway - Zaldei, © Ekainberri - Caperochipi

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Ekain’s entrance passageway - Zaldei, © Ekainberri - Caperochipi
Beyond the Muse – Museo delle Scienze: Research on the Late Palaeolithic Site of Cornafessa Rock Shelter Reveals Unique Evidence of Bear Hunting

Muse – Museo delle Scienze, Italy / Authors: Rossella Duches and Elisabetta Flor

The complex relationship between men and large carnivores is a current topic of great scientific interest and media exposure. The recent return of bears and wolves to the Alps has been perceived as a valuable enhancement of alpine biodiversity. Nevertheless, it has raised wide problems related to the human coexistence with these animals in a such densely populated territory. Looking at the past, the roots of this relationship sink into our most ancient history: wolves and bears, indeed, generated a great interest in humans starting from the Paleolithic. If carnivore bones are quite frequent in archaeological sites, the information about hunting strategies employed by our ancestors are very rare. Focusing on bear and the alpine region, several remains from Late Upper Palaeolithic sites testify to bear processing for the acquisition of fur and meat but none provides clear evidence of bear hunting. A rare exception is represented by Cornafessa rock shelter on the Lessini Mountains, frequented by the end of the Palaeolithic by Late Glacial hunter-gatherers. The archaeological investigations, coordinated by the MUSE – Science Museum of Trento, have revealed a human frequency dated to 12,000 years ago. During this chronological phase, called Younger Dryas, a new expansion of the Alpine glaciers has been recorded, in association with a lowering of the average annual temperatures of about 4 °C and a rarefaction of the forest cover at a medium altitude. It is therefore understandable that Paleolithic hunters who frequented Lessini Mountains during this cold phase, turned their attention to the bear. This prey could in fact provide abundant meat, fat and a warm fur to protect themselves from the winter cold.

Among the dozens of lithic and bone fragments yielded from the anthropic layer, the researchers have identified a brown bear rib bearing a peculiar mark on its surface. Observed under the microscope and analyzed in 3D, this strange lesion has been attributed to the projectile impact of an arrow, armed with a lithic backed point and at least one more cutting element arranged contiguously on the same shaft. The morphological and dimensional data of the mark, processed statistically, fall within the range of variability of the projectile impact marks produced experimentally on bones by using reliable reproductions of Late Palaeolithic bow and arrows.

On the rib from Cornafessa rock shelter (Ursus arctos) suggests a den hunting through spears, this rib represents the first archaeological proof of bear predation using bow and arrow.

The archaeological excavation at Cornafessa rock shelter is still going on and several other aspects wait to be deepened. The core team of the research project comprises Rossella Duches, Alex Fontana, Nicola Nannini and Stefano Neri from the MUSE; and Diego E. Angelucci and Fabio Cavulli from the University of Trento (Italy). The local municipality (Comune di Alà) also provides a significant technical support.

Wolves and bears, indeed, generated a great interest in humans starting from the Paleolithic.

Marks produced experimentally on bones by using reliable reproductions of Late Palaeolithic bow and arrows.

The identification of this hunting lesion enriches the current debate about Pleistocene bear hunting, offering new clues about the strategies employed by human groups during the Palaeolithic. The mark from Cornafessa rock shelter represents, indeed, the fourth hunting lesion recognized on bear bones for all the Pleistocene. The other evidence from Potočka jizalka (Slovenia), Hohle Fels (Germany) and Grotte du Bichon (Switzerland) consists of three impact punctures, interpreted as hunting predation during winter taking advantage of bears vulnerability in hibernation. Since Cornafessa rock shelter is not suitable as hibernating den, this new evidence represents a dissimilar attestation of bear hunting strategies, testifying to the predation of a bear in a place different from lair caves. Moreover, since the other evidence suggest a den hunting through spears, this rib represents the first archaeological proof of bear predation using bow and arrow.

This research, recently published in the Archaeological and Anthropological Sciences journal, was coordinated by MUSE with the collaboration of numerous research institutions: the Department of Humanities of the University of Ferrara, the Department of Earth Sciences of the University of Siena and the “Abdus Salam” center of Theoretical Physics of Trieste.

The archaeological excavation at Cornafessa rock shelter is still going on and several other aspects wait to be deepened. The core team of the research project comprises Rossella Duches, Alex Fontana, Nicola Nannini and Stefano Neri from the MUSE; and Diego E. Angelucci and Fabio Cavulli from the University of Trento (Italy). The local municipality (Comune di Alà) also provides a significant technical support.

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The Cave of Altamira and its Preventive Conservation Plan

Preventive Conservation as regard cultural heritage is defined as the conservation strategy that establishes a systematic method to identify, evaluate, detect and control the risk of damage in any cultural asset. The aim is to minimize those risks acting on the origin of the problem, which is usually not inherent to the cultural asset itself.

Indeed, the objective of conservation strategies is to eliminate the causes of deterioration, but the only guarantee for long term preservation is the control of the disruption agents that causes degradation and may activate it again in the future.

The conservation environment inside a cave can be considered very unstable. The interaction among disruption agents – such as carbon dioxide, temperature or humidity – is an added difficulty to predict and control potential damage. The situation is further complicated when the conservation environment is unstable, and even the minimal intervention may produce irreparable side effects.

For Altamira the measures designed to identify, detect, evaluate and, eventually, try to minimize the risks of damage are all contained in the Preventive Conservation Plan. This Plan is the tool which comprises the means and actions required for the proper conservation of the cave of Altamira and its rock art.

The work methodology consists in the elaboration of an accurate diagnosis of the state of conservation. This allows us to identify and evaluate the risks of damage in the cave. This all translates into the elaboration of a series of monitoring and control protocols whose objective is to minimise the risks to guarantee the cave’s conservation. These protocols have an identification code assigned that grouped them in the basis of their characteristics and the actions to be carried out. The protocols currently applied in the cave of Altamira are those regarding the access regulation, bio deterioration control, radon gas concentration control, ambient monitoring, humidity and leaking points control, preservation state monitoring, geological and structural stability, and finally, the control of the activity on the surface of the cave and its surroundings.

The conservation state monitoring is the first level for the detection of potential disturbances inside the cave. For this reason, museum conservators-restorers visit the cave monthly in order to detect any sign of disturbance or deterioration. One of the measures included within this protocol is the placement of boards on the floor of the Polychrome room to detect leaking points that may cause eventual losses of pigment or support. This action is complemented with a zone control by high-resolution photogrammetry to measure potential disturbances by registering their evolution. The selection of the areas under control is determined by the roof parts that are very delicate in terms of conservation and that are involved in processes of microorganisms’ proliferation or paint and support washing and dragging.

Ambiance monitoring is another protocol applied in the cave of Altamira. By the placement of measuring stations in different places of the cave we can understand and evaluate its ambiance dynamics given the humidity, carbon dioxide, atmospheric pressure and temperature metrics. Besides, the measurement and recording of those metrics allow us to establish different levels that we call tolerance, alert and emergency.

In short, natural disruption processes in the paintings and in the cave of Altamira exist and will remain. These degradation processes are constant but slow, mostly after the collapse of the cave’s entrance occurred 13000 years ago. Degradation was reactivated and even accelerated with the discovery of the cave in 1868, and the resulting anthropic interventions and massive visits. Despite the fact that avoiding damage is almost impossible, it is in our hands to minimize it by applying control and stabilisation measures such as those proposed in the Altamira Preventive Conservation Plan.

Despite the fact that avoiding damage is almost impossible, it is in our hands to minimize it by applying control and stabilisation measures such as those proposed in the Altamira Preventive Conservation Plan.

ABOUT THE MUSEUM OF ALTAMIRA, SPAIN

The Museum of Altamira is a place devoted to learning about, enjoying and experiencing the life of those who painted and inhabited the cave of Altamira. The museum’s most attractive offer is the possibility of learning about humanity’s first art, Palaeolithic art. The museum is in charge of a legacy of maximum value, the cave of Altamira, a milestone in universal art history whose discovery meant the discovery of Palaeolithic cave art and one of its most spectacular manifestations. The expertise of the artistic expression of the cave’s inhabitants was recognised by UNESCO in 1985 when the site was registered on the World Heritage List.

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The three-dimensional (3-D) digital map available from the scanning process can be compared to William Pengelly’s diaries and it is clear that the Victorian mapping was remarkably accurate. William Pengelly engaged a small team, only four, to undertake his mission; to prove the antiquity of human-kind. This was done by removing two stalagmite floors, one 12,500 years old and the other 430,000 years old, unearthing and recording prehistoric remains, bones of Ice Age animals lying alongside ancient human hunting artefacts. In total 80,000 artefacts were catalogued by Pengelly and these form part of Torquay Museum’s designated Quaternary cave collection and archive. The material from Kents Cavern forms part of one of Britain’s most comprehensive palaeolithic lithic collections. The prehistoric technologies show evidence of ancient human activity in and around Kents Cavern from as far back as 500,000 years ago. Digital reconstructions of the original cave surfaces, removed by Pengelly, will show how the cave appeared to its prehistoric occupants.

Other research projects planned with this 3-D data include cataloguing rock engravings; all of which pre-date 1865 and, for the moment at least, go back to the 16th century, Henry VIII’s Tudor era. The ancient human occupants of the cave, revealed by Pengelly, are of great interest as they include early modern humans, Homo sapiens going back to over 40,000 years and Neanderthals from the same period and earlier. The scans will assist in the search for older undiscovered art work created by these most ancient Britons and help build up scientific evidence for the coexistence of Neanderthals and early modern humans in Kents Cavern.

The scanning included drone footage of the outside areas to provide fly-by sequences from outside to inside the caves. This film and the digital impressions of the cave will be incorporated into on-site visitor interpretation and form the basis for educational programmes to explain the work of the early explorers, cave formations and life in the caves during the Ice Age.

ABOUT KENTS CAVERN PREHISTORIC CAVES, UNITED KINGDOM

This is a cave in South West England with an extensive labyrinth of spectacular and easily accessible caverns, open daily all year. The oldest human fossil ever found in northwestern Europe was found here. At 41,000 years old this makes Kents Cavern the oldest home in Britain. The cave has won many awards for its innovative use of social media and creative product development to support its future.

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UNDERGROUND MAPPING
Kents Cavern Prehistoric Caves, UK / Author: Nick Powe

The entire underground cave system of Kents Cavern has been digitally mapped for future conservation, research and interpretation. TerraDat, based in South Wales, were selected because of their previous experience in underground environments, particularly at Wookey Hole caves in Somerset. The mapping gives extraordinary accuracy for the location of the known underground sections and pinpoint data on all known features in the cavern.

Kents Cavern is formed in 400 million year old Devonian limestone, carved out about 2 1/2 million years ago by a subterranean river. The cave passages were subsequently backfilled with silt and rock fragments washed into the caves. This muddy sediment was compacted and cemented together into a hard red breccia, where it laid undisturbed until 1865. This was the beginning of a 15-year work excavation, masterminded by William Pengelly, who pioneered an archaeological recording and mapping process. He devised a three-dimensional grid layout to manage the process of exploration and to accurately log the significant volume of archaeology coming from cave.

The scans will assist in the search for older undiscovered art work created by these most ancient Britons and help build up scientific evidence for the coexistence of Neanderthals and early modern humans in Kents Cavern.

"The scans will assist in the search for older undiscovered art work created by these most ancient Britons and help build up scientific evidence for the coexistence of Neanderthals and early modern humans in Kents Cavern."

The rocky chamber, © Kents Cavern Ltd
3D digital impression of the Vestibule Chamber
Aerial overview of Kents Cavern visitor centre

Scanner setup in the Organ Chamber
Scanner setup in the Orage Chamber

18
CENIEH AS PROVIDER OF PALEOANTHROPOLOGICAL AND GEOCHRONOLOGICAL DATASETS FOR THE ARIADNEPLUS PROJECT

National Center for Research on Human Evolution (CENIEH), Spain / Authors: Joseba Rios-Garaizar, Maria Isabel Sarró Moreno, Cecilia Calvo Simal and Mohamed Sahnouni

The ARIADNEplus project is the extension of the previous ARIADNE Integrating Activity, which promoted the integration of archaeological data infrastructures. The objective of ARIADNEplus is to expand these data infrastructures from different entities dealing with heritage and archaeology. The National Research Center on Human Evolution (CENIEH), based in Burgos, Spain, is focused on the development of multidisciplinary research in Paleoanthropology and Quaternary Science all around the globe, and in providing services for Quaternary research and for technological and industrial communities. This research is accomplished by three programs, Geology and Geochronology, Hominin Paleobiology, and Archaeology, using top rated laboratories such as Digital Mapping and remote sensing, Geology and sediment analysis, Archaeomagnetism, Cosmogenic, U-Series, Luminescence, Electron Spin Resonance (ESR), Archaeometry, Microscopy, Micro-Computed Tomography, Experimental Archaeology, Use-wear, referential and archaeological lithic collections, and hominin and animal fossil bone collections.

As part of ARIADNEplus digital infrastructure, CENIEH will provide a full range of datasets related to the fields of paleoanthropology and Quaternary sciences, those are generated by these research programs and laboratories. For example, the CENIEH will provide data related with fieldwork and material analysis, such as 3D models of bone and lithic collections, microscopic photos, microcomputed tomography data, or contextual information of dating (i.e. in situ Gamma dose spectrometry measurement for ESR and Luminescence dating), among others. Also, the CENIEH will provide data generated in the different reference collections, such as the Osteology reference collection (COAC), the lithoqueue (LITHO), or the use-wear reference collection (CET).

Considering this fact, the CENIEH, as an ARIADNEplus partner, will provide unique and relevant data to this European digital archaeological infrastructure, incorporating paleoanthropological and geochronological datasets from prehistoric periods and regions not covered sufficiently in the previous ARIADNE project.
### LOCATIONS

**BELGIUM**
1. PRÉHISTOMUSEUM - Flémalle

**CROATIA**
2. KRAPINA NEANDERTHAL MUSEUM - Krapina

**FRANCE**
3. PREHISTORY MUSEUM OF SOLUTRE - Solutré-Pouilly
4. INTERNATIONAL CENTER OF PREHISTORY - Les Eyzies-de-Tayac
5. ISTURITZ, OXOCHELAYA AND ERERIBA CAVES - Saint-Martin d’Arberoue
6. THE MUSEUM OF NEANDERTHAL MAN - La Chapelle aux Saints

**GERMANY**
7. MUSEUM OF PREHISTORY BLAUBEUREN - Blaubeuren
8. NEANDERTHAL MUSEUM - Mettmann
9. PALÄON - RESEARCH AND EXPERIENCE CENTRE SCHÖNINGEN SPEARS - Schöningen
10. ARCHÄOPARK VOLGELSERD - Niederstotzingen-Stetten

**ITALY**
11. FUMANE CAVE - Fumane
12. MUSE - MUSEO DELLE SCIENZE - Trento

**SPAIN**
13. MUSEUM OF HUMAN EVOLUTION - Burgos
14. CENIEH - Burgos
15. NATIONAL MUSEUM AND RESEARCH CENTER OF ALTAMIRA - Santillana del Mar
16. CAVES OF SANTIMAMIÑE AND BIZKAIA MUSEUM OF ARCHAEOLOGY - Bizkaia
17. EKAINBERRI - THE REPLICA OF THE EKAIN CAVE - Zestoa
18. ESPAI ORÍGENS VISITOR CENTRE - Camarasa, Lleida

**UNITED KINGDOM**
19. THE GIBRALTAR MUSEUM - Gibraltar
20. KENTS CAVERN PREHISTORIC CAVES - Torquay
CLIMATE CHANGES IN HISTORY:
AN ARKEOLOGI MUSEOA EXHIBITION
(BIZKAIA, THE BASQUE COUNTRY)

Arkeologi Museoa - Santimamiñe. Bizkaiko Foru Aldundia, Spain /
Author: Iñaki García Camino

As is often the case with all the travelling exhibitions that we bring to the Archaeology Museum, our aim is to expand on the “Ice Age Europe Now” exhibition of the Ice Age Europe network, by developing some of its aspects and illustrating it with evidence gathered locally.

In this regard, and given that there were very cold and warm periods over the last two million years and that there is currently the perception that the planet is warming, we wanted to show the climate changes that have occurred throughout history. This will help us to understand the current situation and, at least, to have data to plan the future and not to make irreversible errors.

The exhibition shows how archaeologists obtain information to reconstruct climate dynamics by analysing the sedimentary records, both natural (found in peat bogs such as Zalama in Karrantza) and anthropogenic, located in archaeological sites. The materials recovered from those strata from different eras are indicators of climate changes and trends.

For example, penguin, reindeer and woolly rhinoceros bones have been found in the strata of 20,000 and 15,000 years ago. They were the animals to be found in Euskal Herria at that time and indicated the existence of a very cold climate. The exhibition includes the pelvis of a woolly rhinoceros found in Kortezubi, the horns of a bison from Dima, the skull of a female Ursus deningeri bear (a species that is now extinct) from Karrantza, jaws of a reindeer from Leketio and small penguin bones that were also dug up in Leketio.

At the end of that Ice Age around 9,000 years ago, an interglacial period (the Holocene) began and continues to the present. That does not mean that there have not been any changes during those last millennia. For example, the end of the Roman Empire coincided with a cold period; the agrarian growth that Europe underwent from the end of the 8th century with a period of pleasant weather; and the crisis of the feudal system with a period of cooling that historians have called the Little Ice Age. That cooling further accentuated the clear crisis from the fall in production, illnesses and hunger.

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Europe underwent from the end of the 8th century with a period of pleasant weather; and the crisis of the feudal system with a period of cooling that historians have called the Little Ice Age. That cooling further accentuated the clear crisis from the fall in production, illnesses and hunger.

For over 6000 years, human societies have used their resourcefulness not only to survive, but also to adapt to climate changes, exploit natural resources and transform the landscape.

In this regard, and given that there were very cold and warm periods over the last two million years and that there is currently the perception that the planet is warming, we wanted to show the climate changes that have occurred throughout history. This will help us to understand the current situation and, at least, to have data to plan the future and not to make irreversible errors.

The exhibition features some tools that we consider to be iconic. The exhibition features some tools that we consider to be iconic. Some of these axes are over 3000 years old, such as one found in Tribisburu (3rd century AD) or the one from Orduña (16th century). Some of these axes are over 3000 years old, such as one found in Tribisburu (3rd century AD) or the one from Orduña (16th century). Some of these axes are over 3000 years old, such as one found in Tribisburu (3rd century AD) or the one from Orduña (16th century). Some of these axes are over 3000 years old, such as one found in Tribisburu (3rd century AD) or the one from Orduña (16th century). Some of these axes are over 3000 years old, such as one found in Tribisburu (3rd century AD) or the one from Orduña (16th century). Some of these axes are over 3000 years old, such as one found in Tribisburu (3rd century AD) or the one from Orduña (16th century). Some of these axes are over 3000 years old, such as one found in Tribisburu (3rd century AD) or the one from Orduña (16th century). Some of these axes are over 3000 years old, such as one found in Tribisburu (3rd century AD) or the one from Orduña (16th century). Some of these axes are over 3000 years old, such as one found in Tribisburu (3rd century AD) or the one from Orduña (16th century).
Mammoths are fascinating animals! These giants roamed glacial Eurasia about 300,000 to 5,700 years ago and are the most iconic animals of the Ice Age. Mammoths lived in the cold steppes of Eurasia and North America. With a maximum shoulder height of 3.75 m, they were actually smaller than the African elephant. We know what they looked like and how they lived from skeletons, ice mummies and Paleolithic representations. Like its modern-day relatives, the mammoth was probably a herd animal. Organized in matriarchal family groups of up to 20 animals, the females and their offspring crossed the plains. The bulls led a maverick existence. Because of the climate, the rut took place in the summer. After 22 months of gestation, the calf was born in the spring with a weight of around 90 kg. Mammoths had a dense undercoat, which was covered by a 1-meter-long outer coat of hair. For even more isolation, they had a 6 cm layer of skin and a 9 cm layer of fat. The ears were small and not visible under the thick fur. The trunk was used as a gripping organ. The tasks were curved strongly and had up to 4 meters in length. Both sexes had tusks, though those of the males were much more impressive. Scruff marks show that the animals slid their tusks along the ground to free food from the snow and ice. The stomach contents of ice mummies show a varied diet comprising herbs, shrub grasses and mosses. An adult mammoth required up to 300 kg of plant food per day. After the Glacial Maximum of the last Ice Age, the mammoth gradually withdrew from Central Europe. 5,700-year-old remains of small-stature mammoths were found on the Wrangel Island in the Arctic Ocean.

As impressive they are to us today, as impressive they were to our Ice Age ancestors. Among the earliest figurative representations are small figurines of mammoths. One of those is displayed at the Archaeopark Vogelherd: the perfectly made, completely preserved mammoth form Vogelherd Cave. It was found in 2006 and is only 3.7 cm long. It is rather slim and has incisions on the soles and the forehead. This emblematic figurine from the Ice Age was crafted and left behind at Vogelherd Cave around 40,000 years ago – the time when anatomically modern humans immigrated to Europe and produced figurative art, musical instruments and body ornaments. The raw material for these mostly came from mammoths: ivory.

The small mammoth figurine from Vogelherd gives the impetus to arrange an exhibition series about the finds from this site. The series “The Vogelherd” will shed light on different aspects around this cave. The special exhibition on the mammoth („Der Vogelherd. Unser Mammut – seit der Eiszeit groß“) will be the starting topic. Initiated and financed by the Förderverein Eiszeitkunst in the Lonetal e.V., the exhibition will be presented at the Archaeopark Vogelherd from August 17 until December 26, 2019.

The mammoth figure forms the central point of the exhibition. Beside the original find, we will deal with other aspects of these animals. We will look at the species itself, such as their evolution, and their lifestyle in the glacial steppes. Another important point is, of course, the relationship between humans and mammoths – whether as a prey, raw material supplier or even as mythical inspiration and impressive creature with which one shares the environment. Finally, we will consider ivory as a raw material for tools, weapons, ornaments and art. An interesting and varied accompanying program will enrich the special exhibition. Lectures by scientists, children’s events and special tours are offered. Come along, we look forward to your visit!

**OUR MAMMOTH – A GIANT NOW AND THEN. A SPECIAL EXHIBITION AT VOGELHERD**

Archaeopark Vogelherd, Germany / Author: Ewa Dutkiewicz

As impressive mammoths are to us today, as impressive they were to our Ice Age ancestors.

**ABOUT THE ARCHAEOARK VOGELHERD, GERMANY**

100,000 years ago the Vogelherd cave was one of the most sought places during of the Stone Age. Today it is at the centre of the Archaeopark and ranks as one of the important archaeological sites for Stone Age culture. Visitors can experience Stone Age activities and get a fascinating insight of the era of our ancestors.

**CONTACT INFORMATION**

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Illustration: Designstudio Setz, © Archaeopark Vogelherd

As impressive mammoths are to us today, as impressive they were to our Ice Age ancestors.

“As impressive mammoths are to us today, as impressive they were to our Ice Age ancestors.”
GIBRALTAR, NEANDERTHALS, AND THE CALPE CONFERENCE

The Gibraltar National Museum, UK / Author: Alex Menez

Gibraltar is intimately linked with the foundation of the field of paleoanthropology, and research from Gibraltar increasingly contributes to the way we study and understand human evolution. Discoveries such as the Gibraltar (Forbes’ Quarry) and Devil’s Tower Neanderthal Skulls provide a trajectory in the evolution of Homo; Neanderthal ancestry; stone tools and human origins; Neanderthal anatomy and physiology; Neanderthal ecology, behaviour, diet, and an updated historiography of the Gibraltar Skull itself, there was something for everyone to contemplate and debate. In addition, art met science in a presentation by Mauricio Antón which highlighted reconstructions of a time when Neanderthals roamed at Gibraltar.

The study of Ancient DNA is a hot topic in human origins. So the presentation by Svante Pääbo captured everyone’s attention. Here was the man who, years earlier, had identified the presence of DNA in 2000 plus-years-old Egyptian mummies; then extracted mitochondrial DNA from a 7000-year-old human brain. And then, in 2010, sequenced the Neanderthal genome. His presentation was followed by Lukas Bokelmann who reported on work on the retrieval of DNA from the Forbes’ Quarry and the Devil’s Tower Skulls. We eagerly await further results from this exciting work which will attempt to establish the relationships of the fossils to other Neanderthal finds.

As if so many interesting presentations, the reporting of recent and ongoing research, and the healthy and passionate debates were not enough to make the conference memorable to all, there had been more. In his conference inauguration speech, the Minister for Heritage, Professor John Cortes, had stated: “I have instructed on behalf of my Government that the Director of the Gibraltar National Museum [Professor Clive Finlayson] formally request the return of the Neanderthal remains [the Forbes’ Quarry and Devil’s Tower Skulls] to Gibraltar”.

A forum to which leading researchers from all over the world come to debate human evolution is Gibraltar’s Calpe Conference. The annual conference, organized by the Gibraltar National Museum, covers a diverse range of subjects in natural history, heritage, and culture. In the over two decades that the conference has been held, a good number have focused on Neanderthal research. Last year’s event was particularly special because 2018 was the 170th anniversary since Edmund Flint, a young and enthusiastic officer of the Royal Artillery, presented what would become Gibraltar’s most famous fossil, the Gibraltar Skull, to the Gibraltar Scientific Society.

‘Neanderthal, the Conference’, ran from the 13th to the 15th of September and was held at the University of Gibraltar. From the origin of Homo; Neanderthal ancestry; stone tools and human origins, Neanderthal anatomy and physiology; to Neanderthal ecology, behaviour, diet, and an updated historiography of the Gibraltar Skull itself, there was something for everyone to contemplate and debate. In addition, art met science in a presentation by Mauricio Antón which highlighted reconstructions of a time when Neanderthals roamed at Gibraltar.

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Snipping around in an effort to gather background material for my reportage of the conference for the Gibraltar Chronicle, I heard one of the delegates during a coffee break on the last day say: “A lot of great stuff has gone on at the conference”. And that, I thought, fairly summed up Gibraltar’s 22nd Calpe Conference.
THE FUTURE OF THE NEANDERTHAL MUSEUM: OF, BY AND FOR ALL

Neanderthal Museum, Germany / Author: Bärbel Auffermann

Our core theme human evolution points to the perspectives of humanity as a diverse community that is subject to constant change. Climate changes and migrations have led to our genetic mosaic that has never been static. In our permanent exhibition, we show our versatile family of hominin ancestors and also address the themes of skin colors and racism.

In our special exhibition "2 Million Years of Migration", we have shown with archaeological and paleogenetic exhibits and data that migration is a natural part of being human. In this exhibition, we present each European carrying a genetic mosaic of the descendants of the first immigrants from Africa, early Anatolian and Middle Eastern peasants, and people from the Eurasian steppe areas. The exhibition ran successfully in the Neanderthal Museum in 2017 and is now touring as a traveling exhibition at other German museums. Since then, the district government has been using our input for their teacher training on migration. The work on this exhibition has shown us that archeology can make important contributions to societal discussion about migration and that we are able to make public statements on current issues through exhibitions and programs.

With the beginning of 2019 we started with the regional blind association the model project nMsee. Together with blind, visually impaired and sighted visitors, an app game is developed and tested that makes the content of the permanent exhibition "playable". In the form of a text-adventure via screen reader software, the game leads through tangible stations through the Neanderthal Museum. Each station connects the digital level of the app with audio elements, tactile exhibits, tactile signs and tactile plans. Through playful learning during the museum tour via the app game, a new approach to complex topics in prehistory for people with and without visual impairment is created.

Research, app and new infrastructure are made possible by generous donations of the stiftung w ohlfahrtspflege, the nrw-stiftung, the Landschaftsverband rheinland (LVr) and the kämpgen-stiftung.

Through our regular attendance at the annual conference of the international network Ecsite (European Network of Science Centres and Museums) and our participation in a working group on diversity, equity and inclusion, we have become aware of our cultural diversity deficits. The first step was to train our head of education and programs to become a diversity trainer. She will pass on this expertise to the neanderthal Museum team. We strive to sensitize all work areas in terms of diverse opening, from the visual language of our ads to the exhibition and program planning.

Ideally, this process should be participative, involving potential social actors. We have already gained initial experience in the participation of external votes: For two years, we have been working on several projects according to the Design Thinking method and involving our planning process.

In order for diversity to become a matter of course, the team has to develop an attitude towards the opening of the house.

The aim should be to develop exhibitions and programs not only for but together with actors from the diverse society. In doing so, we see the initiative OF/BY/FOR ALL (www.ofbyforall.org) and the work of Nina Simon as a role model. In our vision, the Neanderthal Museum is a place that many of our community members naturally seek to collaborate, enjoy, or seek education.

Our permanent exhibition shows human evolution not as a directed process, but rather as the result of adaptation and chance, with a range of diverse hominin ancestors.

In our vision, the Neanderthal Museum is a place that many of our community members naturally seek to collaborate, enjoy, or seek education.
8,000 GRANDMANS AGO

Fumane Cave - Homo 3.0, Italy / Authors: Barbara Bussola, Niccolò Jacopo Camilloni, Anita Gubbiotti

One of the main purposes of our work at Fumane Cave is to raise awareness of the archaeological site and its outstanding worldwide significance among people living in the immediate neighborhood. Over the years we have found that many people from Fumane town and surrounding areas have never been to the cave and are not aware of its worldwide importance.

Their primary school children, though, are much more interested, especially those who are learning about prehistory for the first time. Luckily, every year the teachers of our local comprehensive institute bring their classes to Fumane Cave and our guides go to the school to hold a range of suitable “practical/playful” lessons on human evolution.

Last year we went much further. Thanks to the determination of a teacher, Franca Gasparini, and to the willingness and helpfulness of professional film director Andrea Sperotti, a short movie on the ancient inhabitants of Fumane Cave has been made. All the actors are Franca’s primary school children.

“I have been wanting to make a video on Fumane Cave that a wide audience could appreciate for a long time” she says, “not only to raise interest and convey scientifically correct information but also to underline that by learning more about prehistory we can understand our times and ourselves better: how afraid we are of meeting someone different, then realizing we are so alike is the film’s main theme.”

“The children”, adds Franca, “welcomed the idea with enthusiasm and curiosity. They seriously became Neanderthals and Sapiens and we let the images speak for themselves.”

The children play a small group of Archaic humans who decide to leave Africa about 1.5 million years ago and a group of Homo sapiens who leave Africa about 200,000 years ago. Another group of Sapiens arrives in the area around Fumane Cave around 40,000 years ago, where some Neanderthals live. Did they meet? The question is left open.

The plot and the themes were obviously adapted to make them comprehensible to 8-year-olds. The title of the movie, 8,000 Grandmas Ago, refers to the fact that the oldest Homo sapiens yet discovered in Africa is 8,000 generations (200,000 years) old, a time-concept children struggle to understand. Linking the abstract idea of generation to a real family member—grandma—helps them grasp the distance into the past, as even children know that every grandma has a grandma, and so on.

Nevertheless, scientific supervision was vital and this was overseen by Prof. Marco Pernasini, director of archaeological research at Fumane Cave. He also spent an afternoon at school discussing his work at the cave and human evolution with the children.

Costumes, makeup, weapons and tools were supplied by the team of guides, who wrote the screenplay with the teachers and the director.

The film was shot nearby the archaeological site. “Neanderthals and Homo sapiens met in Europe, our home: we are the outcome of their migrations and encounters”, says Andrea Sperotti, film director. "Giving an emotional meaning to the work and providing scientific knowledge at the same time was the most difficult challenge.”

The film has been presented on various occasions, not only to the families of the children-actors involved but also during an international travel book festival in June and at the Ice Age Europe meeting in Fumane in October 2018 (with English subtitles).

8,000 Grandmas Ago is a project in partnership with Istituto Comprensivo B. Lorenzi, Fumane, coordinated by Franca Gasparini. Film direction by Andrea Sperotti.

CONTACT INFORMATION
Grotta di Fumane is a cave on the southern edge of the Veneto Pre-Alps, in the North of Italy. It has produced a dated sequence from the Middle to the Upper Palaeolithic. Excavations have been carried out at different times since 1988.

Thousands of flint flakes and cores, bones, teeth, charcoal, worked pebbles, bone hammers prove that Neanderthals made fire, manufactured stone tools, butchered animals and birds, and treated hides and pelts. Painted stone slabs and perforated sea shells testify to some of the first modern man artistic expressions in Europe.

ABOUT FUMANE CAVE, ITALY
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Speleology – Experience and Adventure Serving Scientific Research

Museum of Prehistory Blaubeuren, Germany
Authors: Barbara Spreer and Hannes Wiedmann

About 160 million years ago the Swabian Jura was covered by a warm sea, where ichthyosaurs and many other animals lived. Remains of these creatures settled on the seabed where they became fossilised into limestone. Over a long time, caves formed in the limestone, for example the famous Blau cave, which is over 15 kilometres in length and with immense subterranean halls. These cave-worlds below the surface are fascinating and provide shelter for a unique living environment. From the 2nd to the 6th September 2018 the speleologist Petra Boldt with 12 children aged 10 to 12 years old, set out to explore this mysterious world and describe it scientifically. Geological processes were explained and a replica cave was constructed to train the children in speleology. The following day they went on a real cave, the Bärental cave near Blaubeuren.

For decades cavern excavations have been taking place in the Bärental cave. In the entrance section Palaeolithic objects from Magdalenian times came to daylight in the 1930s. The cave shows clearly its formation by water for up to 800 meters. After a briefing on cave safety and putting on helmets, warm clothing and lamps, the young scientists began their first cave climbs and crawls from the entrance. The children took samples of sediments and the inhabitants of the cave were identified. Equipped with food provisions and waterproof containers for sample collection, their underworld journey began. It lasted some hours.

On the way Petra Boldt pointed out fossils, dripstones, eccentric, crystals and of course the inhabitants of the caves. A living environment that is hostile to human life but one that has to be protected for species that live there. The next day the collected sediments were examined under a microscope when various coloured particles were seen glittering; little rounded stones, which must have been transported over a long distance, little sharp and flaked pieces of dripstones and crystals were revealed. As such the children realised the fragility of the world beneath their feet and the protection it deserves.

The archaeological excavations in the caves of the region were for decades cavern excavations have been taking place in the Bärental cave. In the entrance section Palaeolithic objects from Magdalenian times came to daylight in the 1930s. The cave shows clearly its formation by water for up to 800 meters. After a briefing on cave safety and putting on helmets, warm clothing and lamps, the young scientists began their first cave climbs and crawls from the entrance. The children took samples of sediments and the inhabitants of the cave were identified. Equipped with food provisions and waterproof containers for sample collection, their underworld journey began. It lasted some hours.

The children learned a lot about the Ice Age and life in Palaeolithic times, the excavations in our region and the special finds. They were fascinated by the little ivory figurines and the flutes, which were made 40,000 years ago. After the tour we opened the experimental excavation area in the museum yard and children worked in pairs to excavate a quarter of a square meter. In the real excavation the soil had to be taken out carefully and sieved.

The unearthed objects were excavated with little trowels and brushes, and recorded on a map. Find numbers were allocated, a register generated and the artefacts identified. After the excavation process, we looked in detail at the results when the young excavators had the opportunity to discuss what they had uncovered and what it revealed about life in former times.

At the end of this annual week-long event the children created a presentation of their experiences and insights, showing it very proudly to their siblings, parents, grandparents and friends. The success of the 2018 week has led to a further week being planned for young scientists in the 2019 school holidays themed on "The Stone Age on the Swabian Jura".
PREHISTORY FOR ALL
The Museum of Neanderthal Man La Chapelle aux Saints, France / Author: Véronique Simbille

At La Chapelle-aux-Saints (France), the Museum of Neanderthal Man is an interpretation centre for all ages, with guided tours and activities on offer to understand the history of our humanity. This dynamic scientific place welcomes school children and students, as well as family holidaymakers. In addition to the regular program, two particularly outstanding events will take place in 2019:

7th Prehistoric Book Fair / 27-28 April 2019
This event is a unique book fair dedicated to prehistory showcasing twenty or so authors of scientific books, novels, children’s books and comics. The programme includes four conferences: “Were ancient humans artists?”, “How can archaeology overturn preconceived knowledge?”, “Anthology of Prehistory” and “The Issues of Mediation in Prehistory”. Activities for children (and for adults who retain their childhood soul) include “Around the paper: the manufacturing process and exhibition”; watercolour painting using natural ingredients such as beetroot, coffee and spinach; an herb workshop entitled “From the leaf to the tree”; and stencilling tee-shirt with the words “Are you Cro Magnon or Neanderthal?”.

Archaeology mission - An exhibition / 8 July – 22 September 2019
Go back in time, analyse remains, trace our history through archaeology. But who is conducting the investigation? Where are the clues? Who are the witnesses to the question? Expert, enthusiast or simply curious... choose your mission and discover what archaeology is all about. In the laboratory or on a field excavation, everything becomes a clue to the mystery in the soil, understand the environment and reconstruct the lifestyles of our ancestors.

ABOUT THE MUSEUM OF NEANDERTHAL MAN, LA CHAPELLE-AUX-SANTS, FRANCE
The museum was created in 1996 close to the village of La Chapelle-aux-Saints in Correze, France and presents the discoveries made by the Bouyssonie brothers, the importance of the site, and an exhibition based on the burial to show how sophisticated the Neanderthal culture was.

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[Image of the museum and archaeological exhibits]
The group must be able to pass the spider web without touching the strings. In addition, only one player may enter a field at a time, after which the field is blocked for all other players.

All group games that have to be played have been simplified in their sequence. In addition, there are flexible rules that can be adapted according to the group. No station has to be processed statically according to a fixed rulebook.

For the participants it is important that positive aspects should be conveyed as far as possible. In experiential education, it is always a matter of identifying and addressing problems of communication and disturbances in the group structure - this is only a marginal aspect in the paläon.

The feedback from the visitors was so positive in 2018 that a treasure hunt will also take place in the summer camp in 2019. A group of Neanderthals will then search for the legendary glimmering stones to ensure the survival of the group.

Solving problems together promotes creativity, curiosity and mobility, and offers new food for thoughts.

The finds from the approximately 300,000 year-old and unique archaeological complex of Schöningen allow us an essential and improved understanding of how our predecessor Homo heidelbergensis lived. They open a window into the Palaeolithic Age and are providing answers to the significant question: Where do we come from? The Schöningen Spears are among the most important Palaeolithic finds of human-kind. The originals are on show exclusively in the “paläon – Research and Experience Centre Schöningen Spears” in Schöningen (Lower Saxony).

ABOUT THE PALÄON, GERMANY

The Children excitedly cheer for their father, who is standing in the middle of a spider's web stretched out of ropes. Supporting him there are five other adults in the construction, the children stand on the edge and provide help. The participants are in the middle of a tour through the summer camp in the paläon – Research and Experience Centre Schöningen Spears. Since 2015, the paläon provides a special summer offer for families and groups in its outdoor area.

The wooden palisades rise high into the sky, the flag waves over the grounds. The striking wood logs marks a square that visitors can immediately recognize as a special area. Entrance to the camp is possible with payment of the entrance fee to the paläon, guided tours start every hour. 15 guides work during the summer months with individual visitors and groups in the camp.

Each year, the camp focuses on a different theme. In 2018 it was all about a fantastic treasure hunt. Together with their guide, the visitors set out on the trail of the oldest symbols in the world. The exciting story of a professor who dedicated his life to the search for the oldest symbols in the world begins in the entrance yurt. He spared no expense and effort and embarked on an incredible journey around the world. Unfortunately, he lost the artefacts with engraved signs and today only an incomplete travel diary of him exists. But a lucky circumstance led to a new trace and now the visitors go into the deep jungle to finally recover the mysterious symbols.

The camp was conceived as an experiential education program. The groups must work together to solve the given tasks. It is all about team-oriented communication and an open attitude towards other group members. Solving problems together promotes creativity, curiosity and mobility, and offers new food for thoughts.

The camp is the perfect opportunity for parents to enjoy time with their children and learn about the Palaeolithic Age. The camp is open to children aged 7 and over and is a unique opportunity to experience the Palaeolithic Age in a fun and educational way.

CONTACT INFORMATION

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Considering becoming a network member? Here are 10 great reasons to apply

1. Enhance your recognition as a top European heritage site connected to the Ice Age.
2. Enhance your connections and professional networks across Europe.
3. Benefit from cross-marketing effects for the promotion of your site, research and activities.
4. Get behind the scenes of other member sites and institutions and be the first to learn what’s new at locations across Europe.
5. Profit from informal learning and sharing across the network for your professional development.
6. Be at the forefront of and participate in new and innovative projects.
7. Profit from sponsors and partners looking for a Europe-wide impact.
8. Be part of a growing tourism network seeking to implement responsible tourism initiatives for sustainable growth.
9. Benefit from highly effective work with minimum of bureaucracy.
10. In short: Be part of a strong, growing brand.

For more information on full and associated membership and how to join visit our website or contact the network office:

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