



DOI: <https://doi.org/10.26720/anthro.18.10.08.2>

The 60th annual meeting of the Hugo Obermaier Society in Tarragona

The 60th annual meeting of the Hugo Obermaier Society in 2018 took place in Tarragona on behalf of the invitation of the **Institut Català de Paleoecològic Humana i Evolució Social (IPHES)**. The Society is highly thankful to the kind invitation of the *Catalan Institute of Human Paleoecology and Social Evolution* (IPHES), and especially to its director, Prof. Dr. Robert Sala, as well as to Dr. Maria Gema Chacón Navarro and Prof. Dr. Florent Rival, which both are affiliated at the same above-mentioned institution, for the felicitous organization. The IPHES is one of the leading Paleolithic research units in Europe. It was founded as a transdisciplinary institution in 2006 with the intention to combine the humanities and the social sciences with geoscience and bioscience and to apply this bundle of scientific approaches to the study of human and social evolution. The IPHES excavates and analyses a long list of sites worldwide recognized as major stepping-stones in the investigation of human evolution. Among these are Atapuerca, Orce, Abric Romani and the Toll Caves. Fieldwork is also conducted in Northern Africa, Iran and Indonesia.

The fact that the 60th anniversary of the first annual meeting was celebrated in Spain fits well to the history of the Hugo Obermaier-Society. However, it is worth mentioning that the 60th anniversary of annual meetings is not congruent with the timespan of the overall existence of the Society: founded on the 23th of June 1951, the Hugo Obermaier Society experienced a period between 1958 and 1967 when annual meetings and excursions took turns. Most probably with reference to the biography of Hugo Obermaier, the first excursion in 1958 went to Spain, resulting in a double anniversary in 2018: besides the 60th annual meeting, 50 years passed by since the first excursion to Spain (and 15 years since the last stay of the Society in Spain, when the meeting was held in Santander). The intercept points between the biography of Hugo

Obermaier and Spain are too numerous to be mentioned here in full length. Therefore, it should be sufficient to recall that he was scientist at the *Museo Nacional de Ciencias Naturales* from 1914 to 1922, and adjunct professor at the Universidad Central until 1939. In addition, he led several important excavation at Spanish sites such as El Castillo.

The talks of the 60th annual meeting, as well as the poster session, took place in the lecture hall of the **Universitat Rovira i Virgili** and were further sponsored by **Agència de Gestió de Ajuts Universitaris i de Recerca** (for the PDF version of the of conference proceedings with the abstracts and the excursion guide see "www.obermaier-gesellschaft.de/english/meetings.html"). The program started on Tuesday afternoon with welcome speeches by the organizers, Maria Gema Chacón Navarro and Florent Rival, and the President of the Society, Thorsten Uthmeier. Afterwards, T. Uthmeier handed over a poster of a bank check about 5,000 EUR as a symbol for the award of the **Hugo Obermaier Research Grant**, to this year's winner Senka Plavšić, a PhD candidate from the Department of Archaeology at the University of Belgrade. The steering committee in unison selected her application "Excavation of the Meča Dupka Cave site: Study of the Late Middle Paleolithic and the emergence of Upper Paleolithic in Southeast Serbia, Balkans" as the sixth prize winning project since the award was initiated by Herta Halter in 2008 (for further information including the rules for application see "www.obermaier-gesellschaft.de/english/application.html").

The talks started on Tuesday with a session about **"Reports on the Lower and Middle Paleolithic"**, chaired by T. Uthmeier. In the first talk of this session, B. Rodríguez Álvarez, J. Rosell Ardèvol and J. Serangeli Dalmau reported on "An analysis of chaînes opératoires in Schöningen as a case study to be compared with other Paleolithic sites". It is well known that the production and usage of lithic tools, which are often the only material preserved, are intertwined with the operational chain if tools made from other materials such as bones and wood. Due to the exceptionally good preservation of the finds, including archaeological

objects made from organic materials, at the late Lower Paleolithic bog-site of Schöningen it is possible to compare and correlate the production and use of these different raw materials. Most prominent new findings in this regard are the identification of a digging stick – shedding light on the possible use of eatable resource such as roots or honey – and the presence of animal bones with rounded ends and surface pitting, pointing to a use in the production of lithic artifacts. From the pitting marks alone it is, at this state of investigation, difficult to decide whether the pieces were used as a soft hammer percussion tool or as an anvil. The talk of P. Haesaerts, P. Spagna, F. Damblon and D. Bosquet about "New insight on the chronostratigraphic background of the Haine terraces system (Belgium), with special attention to Middle Paleolithic laminar assemblages between 280 and 80 ka" was equally dedicated to the Late Lower Paleolithic, this time reporting on geoarchaeological matters. Incorporating new evidence from fieldwork of cover sediments at the sequence of the Haine Basin and correlating these with layers within the regional archaeological sequences of Petit Spiennes and Mesvin IV, the new findings led the authors to propose of a novel chronological scheme. Following Haesaerts et al., the Saalian includes an additional cycle, now lasting from MIS 6 to MIS 10, and the chronological position of the aforementioned Levallois assemblages shifts towards older ages between MIS 12 (Petit Spiennes) and MIS 10 (Mesvin IV). The Middle Paleolithic section of the annual meeting started with the presentation of B. Çep and S. C. Münzel about the "Heidenschmiede, a Middle Palaeolithic Rockshelter in Heidenheim. Lithics, Fauna and AMS dating". A re-evaluation of the faunal remains and lithic artifacts recovered in the course of old, poorly documented excavations showed that horse dominated the strongly weathered animal bones, which showed numerous human modifications. The lithic artifacts were almost exclusively made from local raw materials. Bifacial pieces, which speak for the presence of a Micoquian, side scrapers and retouched flakes and blades characterize the few modified pieces. Technologically, blades stemming from both Levallois and non-Levallois cores are a specific regional feature for the late Middle Paleolithic of the Swabian Jura. A similar topic, yet focused on another site, was dealt with in the talk of B. Çep, J. A. Frick and B. Schürch about the "Reevaluation of the site Große Grotte near Blaubeuren, Swabian Jura, Germany". The site, excavated by G. Riek in the 1960ties, is especially well known for the combination of leafpoints and a bone

point from Layer II, which is stratigraphically on top of the succession of Mousterian assemblages. However, any chronological conclusions are hampered by the fact that the excavations, although using a square meters grid and removing natural layers, did not result in a clear-cut differentiation of the find horizons. The novel investigations are an attempt to disentangle the mixed assemblages by using the documented position of the artifacts and techno-typological criteria.

After the coffee break, the session – now chaired by W. Antl-Weiser – was continued with "Isotopic insights into the paleoecology (diet, mobility) of late Neanderthals in North-West Europe" reported by C. Wißing, H. Rougier, I. Crevecoeur, D. Drucker, M. Germonpré, Y. I. Naito, C. Posth, P. Semal and H. Bocherens. The analyzed hominin remains stem from the Troisième Caverne of Goyet Cave in Belgium and are compared to materials from the nearby Spy and Scladina Caves. The good collagen preservation of both hominin and faunal remains in these caves enables the reconstruction of Neanderthal diet and mobility patterns. The present case study used the Sulphur isotopic composition, which gives insight into the Sulphur ratio of plants at the bottom of the food web. It turns out that despite the relative proximity of the sites and the use of the same prey species, Neanderthals at Spy and Goyet used different foraging areas. One explanation may lie in the observation that the Goyet individuals, who show signs of cannibalism, did not live in the vicinity of the site where they were found, whereas the (non-cannibalized) Spy Neanderthals did so. The final talk of the first day of the annual meeting by J. M. López-García, A. Livraghi, M. Romandini and M. Peresani was dedicated to the "Environmental and climatic reconstruction of the Neanderthal site of De Nadale cave (Zovencedo, Berici Hills, Northeastern Italy) through the small mammal assemblages". The site yielded a single find horizon with numerous faunal remains dominated by giant deer, red deer and bovinds is associated with a Quina Mousterian. The small mammal fauna presented here consists of 201 identified specimen, which in combination with regional multi-proxy environmental studies and correlations with sea cores from the Mediterranean positions the find-bearing layer of Unit 7 to MIS 4. Such a datation matches one absolute U/Th-date of $70,2 \pm 1/-09$ ka BP.

The first day of the meeting continued with the **Poster Session**, where each author had the possibility to give a stand-up talk. As in the previous years, the authors have the opportunity to publish their posters

on the NESPOS-homepage ("www.nespos.org/display/PublicPosterSpace/Home"; manuscripts should be send to the president of the society: thorsten.uthmeier@fau.de). Afterwards, the Universitat Rovira i Virgili invited the participants of the annual meeting to an evening reception, which was opened by a welcome speech of the vice president for research, Prof. Dr. Francesc Díaz González. It is worth mentioning that the delicious red and white wine offered in addition to snacks and finger food was produced by students in oenology of the Tarragona University.

On the morning of the second day, the **Special Session "Neanderthal behavior and ecology in the Mediterranean area"**, for the start chaired by María Gema Chacón Navarro, began with a talk by C. Sánchez-Hernández and F. Rivals about "Mediterranean vs. Atlantic: Ecological niches of ungulate preys in the Iberian Peninsula during the Middle Paleolithic". The aim of the study was to test in how far climatic changes on the Iberian Peninsula may have changed the feeding behavior of prey and thus influenced the hunting (and therefore: the subsistence) strategies of Neanderthals. Using dental meso wear (feeding behavior of month to years) and micro wear (feeding patterns of days to weeks before death), the authors conducted a diachronic comparison for *Cervus elaphus* and *Equus ferus*. The clear-cut results show that red deer during the Middle Paleolithic period of the Iberian Peninsula was a leaf dominated mixed feeder, while equids showed a pattern of pure grazers. Interestingly, these patterns did not change throughout the time span studied, suggesting that climatic shifts did not alter the feeding patterns of these prey animals. In consequence, this means that observed shifts in the hunting strategies of Iberian Neanderthals cannot be explained by a change of the ecological niche of their main prey species. It followed a report on "Eemian Neandertal ecology in Mediterranean southeastern France: Isotopic evidence" by H. Bocherens, D. G. Drucker, C. Daujeard, J.-P. Raynal and M.-H. Moncel. The team investigated the carbon, nitrogen and oxygen isotopic values of herbivorous and carnivorous species, including humans, from the Eemian occupations at Baume Flandin and converted the results into ecosystem carbon isotopic ratios. These indicate an admixture of forested areas and open vegetation and, at the same time, quite variable foraging areas of the main prey species of Neanderthals, e.g. red deer, roe deer and horse. Therefore, one has to expect competition between Neanderthals and the other predators present

in the faunal record, which in sum also hunted in open (hyena) as well as in forested (lynx) habitats. The topic of man-environment interaction was continued by A. Moclán, R. Huguet, B. Márquez, C. Laplana, N. García-García, D. Álvarez-Lao, A. Pérez-González, J. L. Arsuaga and E. Baquedano, who gave a talk about the "Pinilla del Valle sites: new preliminary data to understand Neanderthal-carnivore interaction in the Iberian Plateau". Intense zooarchaeological as well as taphonomic analysis resulted in the identification of sites with intense carnivore activities side by side with sites that yielded faunal remains stemming from human activities, all dating to MIS 5 and MIS 4. This unique scenario allows for testing different modes of occupation in archaeological sites by crosschecking the faunal data with contemporaneous assemblages of non-anthropogenic origin. One example of this research design was given for Level F of Navalmaillo rock shelter, where human occupations dominated and only rare intermittent visits of carnivores were identified.

After the coffee break, F. Rivals was responsible for the management of the discussion of the prolonged Special Session. The talk of J. Marín, P. Saladié and A. Rodríguez-Hidalgo about "Neanderthal subsistence strategies at Abric Romani" was the first of a number of presentations that dealt with sites of this year's excursion. A detailed diachronic study of the archaeozoological record revealed variable hunting strategies of the Abric Romani Neanderthals. Whereas specific hunting strategies correlate to taxa and age of the prey and produce mortality patterns speaking for prime age hunting, non-selective strategies result in catastrophic mortality profiles. Despite the variability of hunting strategies, which is accompanied by flexible transportation strategies independent from prey species, the overall pattern is repeated through approximately 35.000 years of Middle Paleolithic occupation in Abric Romani. A regional study was presented by L. Montes, R. Domingo, M. Roy, J. Martínez-Moreno, R. Mora and P. Utrilla in their presentation about "Tracing the Neanderthal life history from the Pyrenean Sierras Marginales and Exteriores (SME) (Northeast of Iberia). Landscapes and settlement patterns during Early Upper Pleistocene (MIS 6–MIS 3)". Based on 13 major sites, which are mainly caves and rock shelters dated to between early MIS 6 and MIS 3, their analysis elucidated the interdependent relationships between a low to mid altitude karstic landscape and Mousterian subsistence tactics. One interesting results lies in the observation that the Middle Paleolithic hunter-

gatherers regularly choose ecotones between mountains and plains and preferred North-South directions for their residential moves. The following talk of the same working group, this time presented by J. Martínez-Moreno, R. Mora and P. Utrilla, was the second part of the same project concerning "Tracing the Neanderthal life history from the Pyrenean Sierras Marginales and Exteriores (SME) (Northeast of Iberia)", now elucidating "Behavioral Middle Paleolithic trends during Early Upper Pleistocene (MIS 6-MIS 3)".

After the lunch break, the Special Session was chaired by A. Pastoors and went on with a talk of J. Rosell, R. Blasco, A. Rufà, C. Sánchez-Hernández, M. Arilla, M. G. Chacón, A. Picin, M. Andrés, I. Ramírez, P. Mateo, G. Bustos, M. Fernández, L. Zilio, H. Hammond, J. Manuel López-García, H.-A. Blain, E. Luzi, D. J. Álvarez-Lao, C. Tornero, B. Gómez de Soler, S. Talamo and F. Rivals reporting about "Inside the secrets of Teixoneres Cave (Moià, Barcelona, Spain): An example of a multidisciplinary approach applied to a Neanderthal site". Parallel to a changing climate during MIS 3 indicated by faunas of temperate and cold conditions, the team observed a change of Middle Paleolithic site use. After a period of persistency in Unit III dating to app. 50 ka, the site saw a succession of short-term stays of Neanderthals alternating with a use of the cave as a carnivore den by hyenas and occupations by cave bears. Another aspect investigated by the workgroup gained a lot of interest among the audience: the elucidation of aspects of animal behavior that have the potential to alter the formation processes of fireplaces. In a first series of experiments in a safari park, bears, lions and hyenas were tested for their reactions if confronted with fireplaces containing the leftovers of hunted carcasses. It turned out that all species intensively examined the experimental fireplaces and occasionally moved and carried pieces away from the original fireplace area. Because it is unsecure whether half-wild animals still show natural behaviors, J. Rosell et al. have started experiments in a natural preserve in the Pyrenees. The results about the controlled monitoring of experimental fireplaces placed under rock shelters will be published soon. One detail already reported by J. Rosell was the observation that many faunal analysis may underestimate the role of small carnivores such as foxes in the overall taphonomic process, as these were documented to intensively remove small faunal remains without leaving gnawing marks on pieces left at the site itself. Equally exciting was the talk of

J. Ramos-Muñoz, P. Cantalejo, S. Becerra, V. Bolin, L. Cabello, S. Domínguez-Bella, M. del Mar Espejo, D. Fernández-Sánchez, M. Kehl, T. Kellberg Nielsen, N. Klasen, A. Moreno-Márquez, Y. Tafelmaier, E. Vijande-Vila and G.-C. Weniger about the "Middle Palaeolithic Occupations at Cueva Ardales and Sima de Las Palomas de Teba, Málaga". Ardales is well known as a cave with parietal art and a chronology stretching from the Middle Paleolithic to the Chalcolithic. Since 2011, excavations by a Spanish-German team investigate the entrance area, which is filled by a steep sediment cone. Downslope of Ardales, the same team has started to excavate a newly discovered open-air site named "La Cucara", which is supposed to be in close relation to Paleolithic occupations of Ardales. Equally new are excavations in an old trench of unknown origin at the "Sima de las Palomas de Teba", app. 15 km North of Ardales. The sequence has been documented until a depth of 7 m and shows intense Middle Paleolithic occupations dating back to 55 ka BP. Besides these more or less conventional aspects, G.-C. Weniger also shortly reported on the novel absolute Uranium-Thorium-dating of parietal art in Ardales cave, which showed that red color on a series of speleotheme curtains originated from two periods pre-dating any presence of modern humans on the Iberian Peninsula: one period is as old as app. 45 ka BP, whereas the second dates back to at least 65.5 ka BP. These findings shed new light on the origin of art and demonstrate that Neanderthals were habitually producing parietal art earlier than and without contact to modern humans. These results were beyond dispute in the following discussion.

After the coffee break, G.-C. Weniger chaired the last part of the Special Session. M. Walker, M. Haber Uriarte, M. López Martínez, J. Ortega Rodríguez, A. López Jiménez, A. Avilés Fernández, C. Martínez Caravaca, G. Linares Matás, H. Cano Fernández, N. Fernández Ruiz, J. García Torres and Á. López Buitrago reported about "Neanderthal activities between ~130 ka and ~40 ka at Sima de las Palomas del Cabezo Gordo (Torre Pacheco, Murcia, Spain)". The impressive karstic shaft, which was explored by mining activities in 1900, is since many years successfully excavated by M. Walker. Within more than a decade of fieldwork, the remains of no less than 13 Neanderthals were recovered alongside with Mousterian artifacts and fireplaces. Up to now, the excavated sequence covers a timespan from 130 ka to app. 40 ka BP. Paleanthropological highlights are the

anatomically connected skeletons of a woman, a child and a third individual, which were deposited in association with potential grave goods and probably experienced human invention before *rigor mortis*. The last talk of the second day of the 60th annual meeting of the society by J. I. Morales, A. Cebrià, A. Rodríguez-Hidalgo, M. Soto, G. García-Argudo, J. L. Fernández-Marchena, A. Burguet-Coca, C. Cucart-Mora, D. Lombao, S. Bañuls-Cardona, A. Escuté, M. Pey, J. Vallverdú and J. M. Fullola picked out "Late Middle and Early Upper Paleolithic occupation of the Mediterranean Penedès (Catalonia, Spain). First notes about newest excavations" as the central topic. The novel project presented in the talk is dedicated to coastal human occupations between MIS 5 and MIS 3 along the Catalan Littoral Range and results from the fact that so far, regional Neanderthal behavior is documented only in the long sequences of Abric Romani and Cova del Gegant. To enhance the knowledge of sites of the littoral zone, new surveys were initiated, which led to the discovery of a number of promising sites. At three sites excavations gave information about intense and long-term patterns of human presence on the one hand (e.g. La Griera), and sporadic short-term visits (e.g. at Coca Foradada and Coval del Trader) on the other. Equally remarkable is the discovery of levels transitional between the Middle and the Upper Paleolithic at Foradada, indicated by Dufour bladelets and split-based antler points overlaying a layer with large backed implements including Châtelperronian points.

After a short break followed the **Public evening lecture** by M. G. Chacón Navarro and F. Rivals about **"Travelling with Neanderthals through the northeastern Iberian Peninsula"**, which gave an in-depth overview concerning the history of research, the climatic and environmental conditions, the most important sites as well as subsistence tactics and settlement patterns of the Northeastern Spanish Middle Paleolithic. The Conference Dinner at the Restaurant Mas Roselló, situated near to the seashore and serving an excellent Catalan menu, completed the evening.

The last day of lectures started with a Session about **"Reports on the Middle and Upper Paleolithic and Mesolithic"** chaired by the director of the IPHES, R. Sala. In the last decades it became more and more obvious that bone tools have a by far longer (pre-)history than formerly assumed and were already in habitual use during the Middle Paleolithic. E. Turner and P. Neruda contributed to this topic with their presentation about "Bone retouchers and other bone tools from Last Interglacial deposits at Kůlna Cave,

Level 11". From this layer, which dates to the last Interglacial, 185 bone fragments with clear areas of imprints and abrasions resulting from a use as percussion instrument were identified. Among these, 147 have one single area of use, whereas the remaining specimen have two or more. In general, shafts from fresh long bones of horses were the preferred raw material for these items, which correlates with the fact that this species was the main prey. However, bones of other large herbivores as well as a canine tooth of a bear were selected, too. The use as a retoucher is by far the most numerous function identified. A few items with anthropogenic alteration were supposed to have had different functions such as hammers (3 pieces), scrapers (4 items), and pointed tools (1 piece). The following talk of G. Toniato, B. M. Starkovich and N. J. Conard was dedicated to "Middle and Upper Palaeolithic settlement dynamics in the Lauchert Valley of the Swabian Jura: report on the faunal assemblages and new excavation results". After more than a century of research in the Ach and Lone valley, the interest now shifted – parallel to the still ongoing excavations in the aforementioned areas – to other tributaries of the Danube. One of these is the Lauchert Valley, where E. Peters was active at the beginning of the 20th century until World War II. Because all documentation and most finds were lost, the team started new excavations in the Schafstall II rock shelter and reported on the first results of their field activities. Another project that has just started, this time focused on systematic surveys and data collection on raw material procurement, was presented in the talk of Z. Mester, S. Józsa, G. Lengyel, Á. Novothny, N. Faragó, P. Csengeri, L. Domboróczki, M. Gutay and J. Szeberényi about a "Diachronic study of human behaviour in lithic resource management: a research project from northern Hungary". The research area is built up by Mesozoic and Tertiary rocks of sedimentary and volcanic origin, resulting in a large variety of lithic raw materials. The reachability of lithic raw material sources will be compared with their actual use in the numerous archaeological sites from the Middle Paleolithic to Middle Neolithic known especially from the Mátralja and Bükkalja areas by using a multi-disciplinary approach including Fine-Grained Pebble Examination (FPE) and Geographical Information Systems (GIS).

After the coffee break, the session – now chaired by M. Vaquero – continued with a presentation about "The Swabian organic technology of the Aurignacian: Preliminary results" by K. Kitagawa and N. J. Conard.

One focus of this ongoing study of materials from Vogelherd, Geißenklösterle and Hohle Fels is on the raw material species of osseous points from the Aurignacian. It turns out that the Vogelherd material with a high frequency of reindeer antler marks one end of the variance, whereas the presence of ivory points in Hohle Fels (which are generally rare in the European Aurignacian) mark the other. Moving on to the Gravettian, D. G. Drucker, Y. I. Naito, N. Coromina, J. Soler and N. Soler gave a talk about the "Human diet during the Gravettian in northeastern Iberian Peninsula: insights from stable isotopes". They used a novel method of compound specific analysis of stable isotopes and investigated the nitrogen abundances of specific amino acids, e.g. phenylalanine and glutamine acid, to reconstruct the late Gravettian trophic web as revealed in faunal as well as human remains from Arbreda, Reclau Viver and Mollet III. As far as the analyzed humans remains are concerned, any considerable amount of marine food sources can be excluded. Instead, protein from terrestrial sources – including a significant intake of plants – dominate. In addition, the different signatures between the four analyzed human remains concerning the consumption of rabbit, horse and red deer suggest that they belong to four different individuals. The presentation of P. Neruda, Z. Patáková, G. Pyka, N. Doláková, Š. Hladilová and M. Oliva gave spectacular insights into a "Universe Inside Dolní Věstonice Venus" based on high-resolution CT scans. The resolution of several millimeters revealed that the raw material is one single loess clod mixed with smallest particles of different materials such as bones, ivory, charcoal, quartz and even Tertiary fossils. The mixed composition suggests that the material was picked up randomly from the surface of the residential site instead of being deliberately chosen. In addition, the large variety of ingredients clearly speaks against an intentional tempering of the loess. Equally new is the observation that four holes on the top of the Venus' head were made by the same tool. During the discussion, it was suggested that the holes might have had a purely functional meaning, because the progress of simple clay burning in an open fire is traditionally controlled by trying to press wooden sticks into the (then half-burned) object.

After the lunch break, the chair of the session was taken over by M. Weber. In their talk about "The elephant in the room. A materials scientific approach to explain the role of Proboscidean ivory for Late Glacial societies", S. J. Pfeifer, F. A. Müller and W. L.

Hartrampf posed the question why ivory was used as raw material for Paleolithic tool production at all. If compared to reindeer antler, ivory seems less attractive, as it was more difficult to procure and much harder to work. To tackle this question, the authors investigated the mechanical properties of original mammoth ivory from recent permafrost sources as well as recent elephant ivory. Using a standardized protocol to measure the elasticity and bending strength, it came out that that ivory has an outstanding strength if compared to bone and antler. This explains its use in cases of availability as well as the often-observed tendency to re-shape broken items. A new Upper Paleolithic site from the Lone Valley was presented by G. L. Wong, B. M. Starkovich and N. J. Conard in their talk "Human Subsistence and Environment in the Lone Valley of Southwestern Germany during the Magdalenian". The Langmahdehalde is a small rock-shelter that yielded a Magdalenian level with artifacts, faunal remains and a well-preserved fireplace. The preliminary results of the faunal analysis show a dominance of horse, reindeer, red deer and hare among the large mammals, which in part certainly result from human butchery. The small mammal assemblage speaks for the presence of a dry, open steppe. In the following presentation, F. Sauer, C. Hoggard and F. Riede spoke about "Preliminary results on the search for new Late Glacial rock shelter-sites in the Federal State of Hesse". In the frames of the project "Apocalypse Then? The Laacher See volcanic eruption, Deep Environmental History and Europe's Geo-cultural Heritage" at the University of Aarhus, the authors conduct a multidisciplinary survey for new sites with volcanic ash deposits and Late Paleolithic occupations in the German State of Hesse, which is situated in the medial part of the Laacher See eruption fallout. From the point of view of site formation processes, chances for the preservation of tephra are supposed to be highest in rock-shelters. In a first step, 800 rock-shelters known today were analyzed for their potential to bear Late Paleolithic layers by using predictive modeling in a GIS software. The predicted sites were then surveyed on the ground and several of them were chosen for test excavations. The latter will be conducted in the near future to verify the hypothesis deduced from the GIS analysis. After the coffee break, the last part of the final Session – chaired by P. Neruda – started with a presentation about "Endocranial Morphological Affinities of the Early Holocene Individuals from Lagoa Santa and Implications for the Settlement of the Americas" by

M. C. López Sosa. The study aimed at testing the hypothesis that the Lagoa Santa specimen, as well as other South American early Holocene humans, have a cranial morphology markedly different from extant Native Americans and that, therefore, the two groups result from different evolutionary population histories. To explain this scenario, a "Two Main Components Model" was proposed in the past and is heavily disputed among paleoanthropologists until today. In this model, "Paleoamericans" with long and narrow neurocrania resemble Australian and African specimen and settled the Americas app. 15 ka BP, whereas the so-called "Amerindian" show short and wide neurocrania characteristic for Eastern Asia and the Americas and came into the Americas at app. 10 ka BP. Using Geometric Morphometrics, the study tested the validity of the model. It turns out that the Lagoa Santa specimen share morphological traits with Americans on the one hand, and Africans and Australians on the other. This points to a shared common ancestral group of the Lagoa Santa population with other Americans. It followed the talk of B. Spies about "Borders, groups and territories – The Early Mesolithic in southern Germany", which is the topic of his ongoing PhD project at the Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU). The data collection analyzed for the talk included the site distribution in Southern Germany, a regional case study of sites available in Franconia, and data from literature. It was shown that the frequencies of Jurassic chert in the assemblages have a remarkably different distribution than the flat unimodal fallout model expected for direct procurement by hunter-gatherers groups. Instead, the rather high percentages along the Franconian Alps continues in a large buffer to the north and then envisions an abrupt fall at a distance of app. 100 to 120 km north of the Franconian Alps. In addition, the Mesolithic raw material distribution pattern of Jurassic chert (as well as other contemporaneous and differing patterns in neighboring regions) corresponds to different stream networks, with watersheds being the borders in between the observed patterns. Consequently, the raw material distribution patterns observed in the Southern German Mesolithic are interpreted as indicators of group territories. The next talk by M. Oliva shifted the interest to another important Mesolithic region. He talked about the "Specificities of the Moravian Mesolithic Concentration of sites along southern Moravian rivers". Dense clusters with numerous sites mainly dating to the late Early Mesolithic exist along

the Jihlava River and the Dyje River below the Pavlov Hills. These clusters are characterized by large settlements and quarries, pointing to intense occupations interpreted as indicating a high degree of sedentary. Together with the large distribution networks of lithic raw materials, these features allow to speak of "peri-neolithic" phenomena. The last speaker of the 60th annual meeting, K. Kapustka, informed the audience about the "Variability of quartz exploitation during the Mesolithic in the Sabaloka region" in the Central Sudan. Situated in the 6th Nile Cataract, the Mesolithic sites of "Fox hill" and "Sphinx" attracted attention by their extreme richness in finds: up to 3,500 lithics were collected and excavated per squaremetre. On the other hand, the amount of finds made it necessary to investigate "only" samples of lithics, which still account for all in all 60,000 pieces. For this certainly representative sample, the operational chains were described in detail. The first part of the annual meeting traditionally ended with the members meeting and a come together dinner, which this time led most of the participants to an excellent fish restaurant directly at the harbor.

The **first day of excursions** on Friday was oriented to the region of Barcelona and included visits at the Toll Caves and Abric Romani. The Toll Caves are situated some 4 km east of the town of Moià and include the Toll Cave itself and Teixoneres Cave. It are a series of karstic caves, which developed in Neogene limestone and were discovered by speleologists in the 1940ties. After a long history of research, the site has now been intensively investigated by the IPHES since 2003. Before the visit to the cave, which are integrated into a touristic concept and easily accessible, the excursion group was welcomed by the major of Moià and Vice President of the county council of Barcelona, Dionís Guiteras i Rubio (*Figure 1*). The reception was going along with cava sparkling wine and nonalcoholic beverage. After this refreshment, the tour guided by J. Rosell, A. Rufà Bonache and F. Rivals (*Figure 2*) started at **Toll Cave**, a narrow karstic cave of only several meters in width, but app. 2 km in length.

The touristic entry (*Figure 3*) is at the South Gallery (*Figure 4*), which archaeologically is the most interesting part. The filling of the cave is known from a deep trench immediately at the entrance. It unearthed more than 9 m of Pleistocene sediments, which mainly go back to low dynamic fluvial sedimentation. Among the abundant fauna is one of the most significant collections of cave bear remains from the entire Iberian Peninsula. Equally important



FIGURE 1: Participants of the first excursion day in front of the touristic center of the Toll Caves. Photo Th. Uthmeier.



FIGURE 2: Florent Rivals, member of the organization team, at the Toll Caves. Photo Th. Uthmeier.

is the presence of hippopotamus remains in the lowermost part, as these are important biochronological markers indicating full (last-)interglacial conditions. Absolute dates date the overlaying Unit 4 to 57 ka and 69 ka BP. The ongoing excavations have shed new light on the interpretation of Toll Cave as a purely paleontological site after Mousterian tools and cut marks were documented, underlining the contribution of humans to the site formation process. The visit ended with a view to the East and West Galleries, where small rivers run during winter and spring.

Teixoneres Cave is only 50 m from Toll Cave and belongs to the same karstic system. It is much shorter, but wider and therefore more suitable for human occupation. The deposits are sealed by stalagmitic crusts that were dated by U-series 16 ka, giving a reliable *terminus ante quem* for the archaeological levels below. The latter are dated by absolute dating methods to between 33 ka calBP and > 51 ka. For most



FIGURE 3: The entry into the Southern Gallery, looking from inside to the entrance and to resting participants of the Societies' excursion. Photo Th. Uthmeier.

of its parts, Teixoneres Cave was a carnivore den. However, in the entrance part (*Figure 5*), sandwiched between the dated layers mentioned above, the IPHES team found intense human occupations with lithic artifacts, fireplaces and faunal remains with cut marks. The artifacts are made from local quartz, exploited with discoidal and orthogonal methods, and from "better" raw materials such as chert, quartzite and hornfels transported over considerable distances and flaked in the frames of the Levallois concept. In sum, Teixoneres served as a Middle Paleolithic shelter for short-term visits of small groups as part of seasonal transits. Such an ephemeral use explains best the alternating rhythm of human occupation in the entrance chamber and carnivore activities as well as hibernation stays of cave bears in the back part. Recently, the investigation of Teixoneres Cave experienced a dynamic pulse by the discovery of four human teeth belong to two childs and one adult. On the way to **Abric Romani**, the excursion bus passed by



FIGURE 4: View from the entrance to the Southern Gallery, with parts of the sedimentary sequence visible at the left in front of the colleagues. Photo Th. Uthmeier.

the impressive Montserrat mountain chains in the hinterland of Barcelona, with the famous Benedictine Abbey of Santa Maria de Montserrat on top of one of peaks. App. 400 m deeper than that Abbey, the small town of Capellades is situated above a huge, 60 m thick lacustrine travertine cliff called La Cinglera. In these travertines, erosional processes before or during MIS 5 shaped the famous rock shelter of Abric Romani, where Maria Gema Chacón Navarro guided the excursion (*Figure 6*). In the following, the site saw the alternating development of comparably thin archaeological horizons during periods in which the spring activities were reduced or stopped, and rather thick, archaeologically sterile travertine layers representing times of intensive spring activity that made the rock shelter less attractive for human occupation.

Excavations connected to the ongoing project under the directorship of the IPHES started as early as 1983 and are continued on a yearly basis until today. The excavations aim at the documentation of large surfaces, which actually cover almost the entire inner part of the rock shelter. Until now, 10 archaeological levels embedded in an overall 20 m thick sequence known from a deep sounding have been excavated on larger scale (*Figure 7*). These levels were dated by series of U-Series and radiocarbon dates to between 40 ka and 70 ka (*Figure 8*). However, an additional drilling conducted recently confirm that the filling of the rock shelter measures 30 m more, bringing the total depth of the sequence up to app. 50 m! Charcoal and burned travertine in the cores of the drilling indicates human occupations in a core depth between -13 m to -18 m, estimated to date to 100 ka BP. The entire archaeological sequence contains – with the exception of the uppermost level, which is Early Upper Paleolithic – exclusively Middle Paleolithic assemblages. Each archaeological level known so far represents a palimpsest of several occupations on the same surface. The team of IPHES has developed a multi-disciplinary approach to disentangle such palimpsests by raw material sortation, refitting and spatial analysis, which in a second step allow for paleo-ethnographical reconstructions of human activities. These activities took place in the course of residential occupations as well as during short-term stays. Unaware of the length and intensity of the stays, activities focused on well-preserved fireplaces (*Figure 7*), which generally show several phases of use and re-use. One of the most outstanding feature at Abric Romani is the preservation of wood.



FIGURE 5: Anna Rufà Bonache in the main chamber of Teixonerres Cave in front of the upper part of the archaeological sequence. Photo Th. Uthmeier.



FIGURE 6: One of the organizers of the 60th annual meeting, María Gema Chacón Navarro from the IPHES, guiding the tour at Abric Romani. Photo Th. Uthmeier.



FIGURE 7: View into Abric Romani with stratigraphical column (layers are indicated until Level K), occupation surface under excavation (the elongated dark features are profiles of already excavated fireplaces) and position of the deep sounding (in the very right, covered by a metal fence). Photo Th. Uthmeier.

It was used as firewood as well as for structures and toolmaking. In some instances, wood was cached for future needs. The lithic assemblages show a great degree of fragmentation of the reduction sequences, which aimed at a maximized output. After the visit to Abric Romani, the participants of the excursion had



FIGURE 8: Paul Haesaerts and Maria Gema Chacón discuss the chronology of the Abric Romani sequence. Photo Th. Uthmeier.

the opportunity for a refreshing snack and a coffee in the café "La Lliga" in Capellades (*Figure 9*), which is hosting the social club of Capellades founded as the "Lliga Comercial, Industrial i Agrícola" in 1901.

The **second day of the excursions** was dedicated to the archaeology of the Ebro Delta and started with visits to the Epipaleolithic art sites of Rossegadors and Ulldecona, which are part of the UNESCO world heritage cluster "Rock Art of the Mediterranean Basin"

with more than 1,000 sites. The dating of these drawings, mainly executed in red and black color, are still under discussion; hypothesis about the chronological position range from the Epi-Paleolithic and Mesolithic to the Neolithic. The **Abric dels Rossegadors** is situated in the vicinity of the small Poble de Benifassà, app. 7 km north of the town of La Sènia and little more than 30 km from the Mediterranean coast. Deep valleys and comparably steep slopes of the mid-range of the coastal mountains characterize the landscape. The site was discovered in the course of the building of the Uldecona water reservoir in 1940, when the rock-shelter was used as a storing place for dynamite; the paintings were then identified accidentally. The rock art comprises eight panels, which are comparably well preserved, but still affected by water runoff and speleotheme cover. Recently, the site has been equipped with a fence and is now a touristic point with guided tours offered to an interested public. Style and motifs of the all in all 211 figures are typical for the Levantine art. The depictions include wild animals such as cervids and wild boars as well as caprids, for which it is difficult to decide if the depicted animals were domesticated or not. Male and female humans are painted with or without clothes and sometimes armed. In several cases, the depictions form clear scenes interpreted as showing hunting events or the performance of rituals. The second point of visit was the **Rock Art Interpretation Center in Uldecona** (Figure 10), which is connected to the **Abrics de l'Ermida**. The Interpretation Center, which has been opened up in 2005, is situated in the immediate vicinity of the eponymous Ermida de la Pietat and belongs to the Museu d'Arqueologia de Catalunya. The center serves as an introduction to the visits of the sites with parietal art, which are connected by a 500 m long paved walk. More than 400 figures, again in the typical Levantine style, show mainly hunting scenes with the participating humans being depicted with details such as hairstyle, clothing and simple and complex arcs. In some cases, it was proposed that individuals with a higher status and/or more prestige could be recognized. After the visit of the archaeological sites, the participants enjoyed a rich lunch at the restaurant of the Ermida de la Pietat. The paella was made from white and black rice – the latter called "arroz negro" – from the Ebro delta, which is the most important area for the production of rice in Spain and well known for rice variants that are absorbent, the latter being rated as an indispensable property for the preparation of high quality paella. The second day of excursions



FIGURE 9: After the visit to Abric Roman, participants of the first excavation take a rest in the café La Lliga in Capellades. Photo Th. Uthmeier.



FIGURE 10: A member of the Rock Art Interpretation Center Uldecona is guiding participants of the second excursion day at the UNESCO world heritage sites of Abrics de l'Ermida. Photo Th. Uthmeier.

ended in the afternoon with a visit to the Museo de les Terres de l'Ebre in Amposta.

Everyone who participated will certainly remember the 60th annual meeting in Tarragona for its wonderful setting, the perfect organization, the outstanding quality of the talks and posters as well as the warm-hearted hospitality of the Tarragona colleagues. The society is especially grateful to the IPHES, and here *ad personam* to its director R. Sala, for the kind invitation, and to M. G. Chacón and F. Rival, who – in amicable cooperation with the secretary of the Society, A. Maier – made this wonderful annual meeting in 2018 happen.

Thorsten Uthmeier*

Institute for Pre- and Protohistory
Friedrich-Alexander University Erlangen-
Nürnberg (FAU)

Kochstrasse 4, 91052 Erlangen

web: www.uf.uni-erlangen.de

E-mail: thorsten.uthmeier@fau.de

*Corresponding author.