

**SOME HIGHLIGHTS OF 2015, MUPANTQUAT ACTIVITIES, SCIENTIFIC MEETINGS, VISITORS,
FIELD SCHOOL AND RESEARCH PROSPECTS FOR 2016 AT
CUEVA NEGRA DEL ESTRECHO DEL RÍO QUÍPAR AND SIMA DE LAS PALOMAS DEL CABEZO GORDO**

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December first , 2015

To our English-speaking Mupantquat Members, Field-Team Helpers, Colleagues, and Supporters:

Dear Friends All,

Together with my co-directors of excavation Mariano López and María Haber, and our young graduate staff Antonio López, Ignacio Martín, Jon Ortega, Azucena Avilés and Ángel Buitrago, I write thanking you for your past help, interest and support, and to inform any who have never been here about what we are doing. Our helpers contribute to our success. Our mupantquat web-site is being brought up to date and with luck our annual *BRIEFING YOU* informative document about our forthcoming 2016 field season will be put on the web-site during January 2016. Meanwhile, I am sending you here our 2016 poster advertisement and basic information that you may wish to pass on to others, and also some information to keep you up to date on our work and the excellent prospects for the 27th season of our excavations and Field School in 2016. A lot of basic information will undergo little change from that which was in the 2015 version of *BRIEFING YOU* and which will be kept on our web-site until the 2016 edition supplants it (but if you want a copy of the 2015 version I can try to send it on request as a pdf though it is bulky and may not get through).

As most of you know, in June 2012, at the Murcia regional government official Registry, we registered (incorporated) our non-profit *Murcian Association for the Study of Palaeoanthropology and the Quaternary* or *MUPANTQUAT (Asociación Murciana para el Estudio de la Paleontología y del Cuaternario)* which is extending our work and responsible for organizing our annual Field School and excavations (MUPANTQUAT email <mupantquat@gmail.com> <info@mupantquat.com> and web-site <<http://www.mupantquat.com>> which is now working well.

MUPANTQUAT has coordinated the English and Spanish editions of a well-illustrated semi-popular book about more than two decades of our excavations at Sima de las Palomas del Cabezo Gordo and Cueva Negra del Estrecho del Río Quípar. The English text is with the well-known publisher of archaeological books at Oxford which is Oxbow Books, whose editor is preparing it so that it can go to press in 2016; we have proposed a self-explanatory title: "*HOW THE EARLIEST CAVE-FOLK OF SOUTH-EAST SPAIN WERE DUG UP*". Our MUPANTQUAT association itself is publishing the Spanish edition with a printer here at Murcia where it will be given free-of-charge to paid-up members, specified donors and institutions (publication costs are being shared by us and some other organizations). Being a non-profit organization we cannot sell the Spanish edition but we can give it away and have decided to do so to all paid-up members. Former field-team members whose contribution towards the excavation and field school has included MUPANTQUAT membership for the year they came may renew their membership and entitled to receive a copy of the Spanish edition. Because Oxbow Books is a commercial enterprise the English edition will not be available free of charge to MUPANTQUAT members, alas, and any who are interested will have to purchase it from Oxbow Books. We hope to increase our membership in Spain by offering the book as a gift to new members.

A scholarly monograph about the Neanderthals we have excavated at Sima de las Palomas *****IS NOW IN PRESS***** and should become available during 2016, edited by Erik Trinkaus and Michael J. Walker, "*THE PEOPLE OF PALOMAS. THE NEANDERTALS OF SIMA DE LAS PALOMAS DEL CABEZO GORDO, SOUTHEASTERN SPAIN*" (Texas A&M University Press.). Most of the chapters have members of our research staff and MUPANTQUAT among the authors.

A Murcia regional government foundation made an animated film about, and called simply, "CUEVA NEGRA"; our association and the foundation took it around our region for showings in different towns and cities, and after the showing there was a scientific colloquium in which we took part by giving brief talks and answering questions from the audience. We appeared in the PBS-NOVA television documentary "*Decoding Neanderthals*" that was shown in January 2013 in the USA. In 2014 and 2015 our Association has hosted talks from invited speakers in the agreeable and sociable environment of Espacio Pático which is in Murcia city centre and we have also held three joint meetings with the Murcia Regional Geographical Society, one at their field centre, and one each that we hosted at Cueva Negra and Sima de las Palomas. In October 2015 we hosted a 3-day series of guest lectures on Human Evolution that our local savings bank (BMN-CajaMurcia) sponsored at its 300-seat lecture theatre in the city centre which had an astonishing attendance with people having to sit in the aisles! Our speakers were the palaeoneurologist Dr, Emiliano Bruner (of CNIEH at Burgos), the prehistorian Professor José Ramos (of Cadiz University) who excavates on both sides of the Gibraltar Strait at Palaeolithic sites, and the editor, author, and documentary film-maker about archaeology and human evolution, Manuel Pimentel, whose "*Arqueomanía*" team has produced several series for Spanish national television and filmed us on several occasions, so we presented him with a certificate designating "*Arqueomanía*" an Honorary Member of our association (this was at his request after we had proposed conferring honorary membership on him).

Our 2015 team was one of the most international we have ever had, with nationals of Kazakhstan, Vietnam, Venezuela, Australia, USA, Greece, Brazil-Austria (or maybe the other way round), Czech Republic, UK, and Spain. An excellent team spirit was established and everyone participated wholeheartedly on site, in the lab, during seminars and talks, on excursions, and, of course, in extracurricular activities! It was particularly helpful that two of our helpers were able to spend the full six weeks with us. There is still an enormous amount of excavation awaiting us in 2016, and for many years to come! Both sites are very productive. Prospects for 2016 are excellent at both CCueva Negra and Sima de las Palomas. Tell your friends!

A lot is happening! Excavations at Cueva Negra and Sima de las Palomas have given us ever more startling finds in the past few years. At Sima de las Palomas we have uncovered articulated skeletal remains in anatomical connexion of two Neanderthal adults with a child, covered by rocks in the cave 55-45,000 years ago (the last articulated adult Neanderthal to be excavated was way back in 1976, at St.Césaire in France). Researching for his PhD, Jon Ortega is doing brilliant work in our lab, cleaning and identifying the bones in the cemented breccia masses we have excavated. In 2011 we acquired vibroscalpels (so-called "air-scribe" tools) powered by a small compressor to facilitate the cleaning. We have used Murcia University Veterinary Hospital's CAT scanner to visualize human bone remains in the breccia masses and to record the digitalized images for analysis and virtual reconstruction, and we are grateful to Professors Christoph Zollikofer and Marcia Ponce de León who came over from Zürich University in 2011 to show us how they carry out CAT scanning of fossil remains and they most kindly invited Jon and me to visit their Zürich laboratories in 2011. In Autumn 2012 Jon spent several weeks at Zurich "boning up", so to speak, on their IT methodology. They returned to Murcia in September 2015 and further CAT scanning was undertaken at the Murcia Quirón Hospital this time. In November 2015 we welcomed back, to help Jon, Klára Karaková (née Parmová) from Brno in the Czech Republic who has worked with us on several occasions in the field and laboratory.

It was splendid to have John Wilkins back again at Sima de las Palomas in 2015 where the field-work continued downwards in the excavation so that we are now working about 5 m below the overhanging rock roof. We are still finding a large amount of material, mainly Mousterian Palaeolithic implements and animal bones and teeth, many of which show signs of burning, but no more human remains have been excavated. We are surprised at the depth at which material continues to be found, and we wonder if this deep assemblage represents rubbish thrown or dropped from a vanished surface camp-site, but that is guesswork. More excavation is needed to clarify the situation.

Back In September 2012 I presented a poster on behalf of us all about this research on the Sima de las Palomas Neanderthals at the 2nd Annual Meeting at Bordeaux of the then recently-formed European Society for the Study of Human Evolution, which attracted great interest, and the poster was shown again in April 2013 accompanying a talk about the Sima de las Palomas Neanderthals that I was invited to give at the 55th Annual Meeting of the international Hugo Obermaier Society for Quaternary Research and Archaeology of the Stone Age, held at Vienna's grand Natural History Museum. In 2013 an important paper was published demonstrating that the Sima de las Palomas Neanderthals ate plant foods because microscopical phytoliths were found embedded in plaque on their teeth (Salazar-García et al., *Quaternary International* 318: 3-18, 2013) and we are grateful for the help from Dr. Amanda Henry and her collaborators Drs. Domingo García-Salazar, Robert Power and Cynthia Spiteri, for stimulating this important research and involving Sima de las Palomas. In September 2014, in the session on Neanderthals during the week-long XVII quinquennial Congress of the International Union of Prehistoric Sciences that was held at Burgos University, I presented a new poster explaining the likely *intentional* nature of the burial of the three articulated Sima de las Palomas skeletons, and I presented the poster again in April 2015 both at the 57th Annual Meeting of the Obermaier Society held at Heidenheim in Germany, and also at Oxford's Merton College which hosted the 4th Annual Meeting of the itinerant "Unravelling the Palaeolithic" symposia. Our reasons were outlined in a major article about the excavations (see *Quaternary International*, 259: 7-21, 2012). To help us study the skeletons, in January 2011 the eminent Anthropology Professor Erik Trinkaus came over here from Washington University at St. Louis. Thanks to his invaluable collaboration we have published two papers on Sima de las Palomas Neanderthal remains in the *Proceedings of the National Academy of Sciences of the USA* (105: 20631-6, 2008; 108: 10087-91, 2011), two in the *American Journal of Physical Anthropology* (142: 261-272, 2010; 144: 505-515, 2011) and one in the *Journal of Dental Research* (90: 428-432, 2011); Erik and I have edited the forthcoming scholarly monograph mentioned above and one co-author of some chapters is Bristol University's Professor Kate Robson-Brown who came with Bordeaux University's Dr. Priscilla Bayle bringing to Murcia the Bristol microtomograph for CAT scanning of the Sima de las Palomas teeth and jaws in 2012. Kate arranged for me to be Bristol University Benjamin Meakin Visiting Professor in 2014 when I gave lectures there about Sima de las Palomas and gave me the opportunity also to give talks about Simas de las Palomas and Cueva Negra in June 2014 at the universities of Reading, York, Oxford and University College London. I saw Kate again in September 2015 at the 5th Annual Meeting of the European Society for the Study of Human Evolution held this year at the British Museum.

To house our spectacular Neanderthal skeletons a 5-storey museum has been built below Sima de las Palomas (in September 2010 the Chairman of our Regional Government in Murcia laid its foundation stone). I visited the finished building early in January 2013 with the architect, but, alas, it still stands empty and now needs fitting out; work on the interior was scheduled to begin in 2014 but has been postponed to 2016 owing to continuing economic difficulties in Spain which have severely restricted public spending, which is most frustrating. I am engaged in conversations with the regional government politicians in the hope that work may recommence soon. Little is likely to happen until the Spring of 2016 at the earliest because Spain has general elections on December 20th 2015 and it is conceivable that no one political party will emerge with overall parliamentary control and be able to govern on its own, which was happened also here at Murcia six months ago when elections were held for both the Murcian regional parliament and for municipal councils (a pattern repeated in many Spanish regions), which have led to rather unstable coalition governments (the one in the town hall at Torre Pacheco broke down last week after only six months, which has added to the problems because the museum building lies inside the municipal boundary on public municipal land).

Inside Cueva Negra, at a depth of 4.5 metres down in the sedimentary fill, we uncovered calcined bone and burnt chert during our 2011, 2012, 2013, 2014 and 2015 field seasons of excavation in sediment that appears to have been altered by heat. The 2015 field season saw us extend the area affected by combustion which now has been exposed over 2.5 m². This is a slow business because of the need to excavate overlying levels and wash all of the sediment over our sieves because all of them produce material of value. Our field team in 2015 was thorough, patient, and professional, and I compliment everyone. I was impressed with the skills and professional and academic preparation that you all came with, at both the Cueva Negra and Sima de las Palomas sessions.

The deep layer with evidence of combustion is the oldest instance of fire in Europe found to date at any Palaeolithic site (though in Africa there is evidence from before 1,000,000 years ago). Research on the combustion at the site has continued throughout 2014 and 2015 and finally we have achieved acceptance by a major journal of an article about it. The temperature reached about 550°C according to spectrometry analyses of the burnt bone and chert, which have been undertaken by Dr Anne Skinner (at Boston's Williams College) using electron spin resonance methods, Dr. Daniel Richter using thermoluminescence methods (at the Leipzig Max-Planck Institute for Evolutionary Anthropology and at Lüneberg Leuphana University), and Dr Francesco Berna (at Simon Fraser University) using Fourier-transform infra-red techniques with which he carried out postdoctoral research at Boston University under the guidance of the distinguished geoarchaeologist Professor Paul Goldberg who developed the method there. Dr Berna's friend, geoarchaeologist Dr. Diego Angelucci (at the Italian University of Trento), has studied the micromorphology of thin sections he took at Cueva Negra with his PhD student Daniela Anesin (see *Quaternary Science Reviews*, 80:195-199, 2013). Taphonomical research on small mammal bones involving scanning electron microscopy and energy dispersive X-ray spectrometry by Dr. Yolanda Fernández-Jalvo (at CSIC at Madrid) and Sara Rhodes (undertaking doctoral research at Tübingen University following her M.Sc. at Toronto University when she studied micromammalian remains from Cueva Negra and also porcupine jaws and teeth of *Hystrix javanica* from Sima de las Palomas). Mineral and chemical analyses of the burnt sediment were undertaken by our members Drs. Tomás Rodríguez-Estrella (Cartagena Polytechnic University) and Juan Luis Polo-Camacho (Murcia University) using multiple analytical techniques (thermogravimetry with mass spectrometry, X-ray diffusion, X-ray fluorescence, and petrological microscopy). Traceological microscopy was undertaken by our member Dr. Ignacio Martín-Lerma (Murcia University). Optical sediment luminescence dating was undertaken by Dr. Jean-Luc Schwenninger (Oxford University) and his graduate student Mariana Sontag-Gonzalez who took new samples with β -ray spectrometry at both sites during our 2015 field season. A paper has been accepted for publication in the journal *Antiquity* (now published bi-monthly by Cambridge University Press) and we hope it will be published in 2016: "Findings, context, and significance of combustion at the late Early Pleistocene Palaeolithic site of Cueva Negra del Estrecho del Río Quípar (Caravaca de la Cruz, Murcia, Spain)," M.J.Walker, D.Anesin, D.E.Angelucci, A.Avilés-Fernández, F.Berna, A.T.Buitrago-López, Y.Fernández-Jalvo, M.Haber-Uriarte, A.López-Jiménez, M.López-Martínez, I.Martín-Lerma, J.Ortega-Rodríguez, J.L.Polo-Camacho, S.E.Rhodes, D.Richter, T.Rodríguez-Estrella, J.L.Schwenninger, A.R.Skinner.

I presented papers about combustion at Cueva Negra, which excited great interest, at a session on the archaeology of fire at the Burgos XVII IUSPP Congress in September 2014, and two weeks later at the 4th Annual Meeting of the European Society for the Study of Human Evolution at Florence University, and again on October 19th 2015 at the Oxford University Institute of Archaeology. Members of our field staff also are co-authors because they have assisted in uncovering the evidence and studying the remains in the laboratory. At Florence I made the acquaintance of Trevor Underwood who is an independent researcher who has made intriguing and disturbing mathematical findings about the genetic lineages of Europeans, which provoke disquiet with regard to standard interpretations of DNA analyses of Palaeolithic remains. Trevor visited me and I took him to our Murcian sites in June 2015. At Burgos I made the acquaintance of Armin Kaiser who with his wife Mary generously gave me hospitality at Stuttgart, for which I thank them very much indeed, and he drove me to Heidenheim in April 2015. In September he and Trevor came to London's British Museum for the 5th Annual Meeting of the European Society for the Study of Human Evolution which I attended.

An attempt to refine the dating of Cueva Negra is being made by Dr. Mathieu Duval (at CNIEH, Burgos) using electron spin resonance, and we await his findings eagerly. At present, dating is based on, on the one hand, on biochronology of both Arvicolid rodent teeth studied by our MUPANTQUAT committee member Antonio López-Jiménez (who is preparing a doctoral thesis about them), and also large mammal remains studied by our friend and collaborator, the palaeontologist Dr. Jan van der Made (at Madrid's National Museum of Natural Sciences), and on the other hand, on palaeomagnetism (published in *Nature* 46, pp.: 82-85, by Professor Gary Scott and Dr. Lluís Gibert, in 2009). These methods imply an antiquity greater than 780,000 and less than 990,000 years ago, and we suspect it may be between 865,000 and 815,000 years ago during an interglacial period that corresponded to Marine Isotope Stage MIS-21.

The astonishing antiquity of Cueva Negra has interested Anthropology Professor Tom Wynn (at the University of Colorado at Colorado Springs), who is a world authority on what Acheulian and Levallois knapping techniques can tell us about the evolution of cognition in hominins, and he and his colleague Psychology Professor Fred Coolidge (also at UCCS) have written well-known books together about cognition in Pleistocene humans and Neanderthals. Two of their undergraduate students helped in our 2011 excavation season and one of them, Klint Janulis, is now doing doctoral research at Oxford University where also MUPANTQUAT student member Gonzalo Linares-Mata from Murcia is reading for a BA degree in Archaeology. Until now nobody had ever imagined that the Levallois reduction technique in Europe could be as old as we are finding it to be at Cueva Negra, and to have both Acheulian and Levallois techniques at our site is intriguing. Tom, Fred and Sophie de Beaune edited a 2009 Cambridge University Press book on the evolution of human cognition, *Cognitive Archaeology And Human Evolution* which has a chapter by me about the significance of the Cueva Negra lithic assemblage. I missed seeing Tom by a week when I was in Oxford in June last year (he had passed through the week before me) but I had the pleasure in 2014 of seeing Fred twice in September, first at Burgos and again two weeks later at Florence, and then again in September 2015 at the 5th Annual Meeting of the European Society for the Study of Human Evolution at the British Museum, during which Fred, Klint and his wife Amanda, my friends Armin Kaiser and Trevor Underwood and I had a most agreeable dinner at a Greek restaurant, smashed plates and all! I am most grateful for the kind hospitality given to me by Klint and his wife in April, September and again in October. It was a pleasure for me when they came to Murcia in August and I could show them how the excavations have advanced at both sites as well as some rock art sites near Cueva Negra. We have now published more about the significance of the Cueva Negra and Palaeolithic activities there (see *Quaternary International* 294: 135-159, 2013), and are beginning to determine the natural chert sources exploited by the Cueva Negra hominins, thanks to collaboration at Arizona University, where its recent anthropology graduate Winston Zack, who spent three field seasons here, submitted many samples he took, from both the site itself and chert outcrops in its vicinity, to Dr. Alex Andronikov at AU's Lunar and Planetary Sciences Laboratory who has conducted spectroscopic analysis of

rare-earth trace elements in the cherts (see *Quartär* 60: 7-28, 2013) which was distributed in January 2014 and three months later I presented results of this research at the 56th Annual Meeting of the Hugo Obermaier Society at Braunschweig-Schöningen in Germany. Klint and Amanda were not the only friends to return. Australians Dr. Phil Habgood and his wife Dr. Natalie Franklin who have excavated at our sites came back for a rapid visit in August before going to a conference on rock art (on which Nat wrote her thesis). They live at Brisbane as does Birgitta Stephenson who also has dug with us, and she is collaborating with us on residue analysis on which she is an expert, and she hopes to return in 2016, and we hope that she will. Our Palaeolithic use-wear specialist and MUPANTQUAT committee member Dr. Ignacio Martín-Lerma (who teaches at Murcia University) keeps running into her at international conferences, most recently in Germany at Hannover, a couple of months ago, or maybe it was in The Netherlands at Leiden.

In October 2014 I gave a paper on the evolution of cognition in *Homo*, considered from the standpoint of human neurophysiology, at a small international scientific meeting on “*What Made Us Human*” held in October at the Ettore Majorana Foundation and Centre for Scientific Culture at Erice in Sicily, one of whose organizers was Ian Tattersall. I had previously given a preliminary version at Bristol University four months before. At Erice had the pleasure of making the acquaintance of Dr. Héctor Manrique whose PhD was on studying gorilla behaviour and cognition when he was a doctoral student at the Leipzig Max-Planck Institute for Evolutionary Anthropology, and in October 2015 he has gained a teaching position at the University of Saragossa's Teruel campus, after having taught at the Balearic Isles University at Palma on Majorca, to which he invited me in November 2014 to give the talk I had given in Sicily. He visited us at Sima de las Palomas and gave an interesting talk on his research with gorillas. I gave my talk yet again at the “*Unravelling the Palaeolithic*” meeting at Oxford in April 2015 and have submitted it for publication to a journal. I should have mentioned that Klint Janulis was a co-organizer of that symposium, which was most enjoyable. Héctor and I are working together on another possible publication, which I feel is the beginning of a fruitful friendship. We had both become quite friendly at Erice with a Sicilian telecommunications engineer who supports the Ettore Majorana Foundation (Majorana was a brilliant physicist who vanished mysteriously), and who by coincidence works in the same branch (Telecommunications Patent Examination) of the same organization (European Patent Office) as my eldest son (my son at The Hague; Giuseppe Barroco in Munich), and by yet another coincidence his niece, a child psychologist, was spending a few months at Murcia University with a colleague of mine, so in Spring this year Giuseppe came to Murcia to see his niece, and I gave him the grand tour of Cartagena, and he has promised to return! It's a small world!

Alas, I cannot enter into correspondence with everyone individually, even when you write to me with specific enquiries about the progress of our research. Hundreds of people have attended our Field School over the past two decades, and because I have no secretary I cannot answer scores of letters separately. So that is why I am sending you this round-robin letter. One size will just have to fit all, I am sorry to have to say. The snippets offered below will have to suffice, together with what will be put up on the website (especially in “Briefing You”), even if they only serve to whet your appetite for more! You will appreciate, I feel sure, that it is one thing for me to correspond about ongoing unpublished research with the handful of established scientists who collaborate with our project, but it would be an unethical and improper thing for me (or them) to do if we were to enter into correspondence about unpublished new business people who are not directly involved in the scientific development and elaboration of those particular research matters. Their eventual publication must be awaited with your patience - even though it may have to last for a few years.

All the same, I do try to go out of my way to answer enquiries from those graduate helpers who are now doctoral candidates at universities around the world, when from time to time they write to me enquiring about highly specific scientific matters concerning their own research which have occurred to them in relation to knowledge they acquired when working at our sites.

Also, when undergraduate students want to come as helpers, and enquire about how to use their experience to gain credit from their own colleges or universities, because we ourselves have no structure for giving them such credit, I do want you to know that if your own college professors are willing to give you college credit for a paper or report you present to them on your return, then I will collaborate with your college professors who write directly to me to ask about appropriate topics for papers or reports you might present to them, and I will offer you advice during your stay here (but not afterwards); you may use photographs you have taken and, indeed, we always encourage you to take photographs provided that you let us have copies for our use. You should inform your faculty that each one of our Field School's three-week sessions involves 180 hours of training, divided into about ninety of supervised excavation and retrieval of finds both by your own manual excavation and by wet-sieving (wet-screening) of excavated Pleistocene sediment, about seventy hours of supervised preliminary sorting of finds in our field-lab, about ten of talks and seminars and another ten for a visit to places of archaeological relevance and historical interest.

For those universities who require certificates of attendance as requisites for completion of undergrad degrees (especially in Archaeology, in the UK and Commonwealth countries, and a few others), I will sign their forms provided you bring them with you (I won't guarantee to do so if you forget to bring them and try to send them to me afterwards) and I always issue our own Field School certificates of attendance to every helper – whereas some universities only accept their own completed forms (e.g. London), others find ours to be an acceptable substitute should you forget to bring their own forms (e.g. Oxford).

I'm often asked to write in support of helpers who apply for graduate study. It is time-consuming and because I am extremely busy with other paperwork every December and January, I will write such support only provided that I have received the forms I have to fill in for you before October thirty-first, thereby giving me November to fill them in and send them off; usually graduate-study applications have to be in by the following February. Moreover, I will only fill in paper forms which can be returned by airmail (whether to you or the institution you are applying to, depending on its requirements) – whether for graduate-study or any other applications or requests on your behalf. I can fill paper forms in by hand after my university office hours while watching television at home in the evening.

Alas, I do not guarantee to help where an institution gives me no other option than to fill out an “on-line” form. I avoid like the plague having to go “on-line” to institutions and fill in forms “on-line” by computer, for several reasons. First, it can be very slow and take up far too much time in my office hours at the university. Secondly, “on-line” forms are constraining and often do not let me say all those things I might want to say but which I can easily add or annex to a paper form. Thirdly, institutional administrative or secretarial assistants (I have none) ought to be capable of transcribing documents into “IT” documentary formats (though some nowadays seem almost unable to read or write, let alone spell or punctuate with accuracy), but they are not trained either to do anthropological research or to give university lectures to students – both of which comprise what I am paid to do according to my employment contract, whereas I am not contracted to do secretarial work (for which in any case I have never been trained) and I refuse to do it “on-line” so that, at the expense of my working time and labour, some institutions can cut costs by employing fewer administrative or secretarial assistants to work for them than they might otherwise do; there is a fundamental matter involved here involving principles of natural justice, employees' rights and duties, and fair-play by employers in the work-place.

We very rarely get financial help from the public authorities here, alas. We did receive some in 2007 and 2009, but there was none in 2008, 2010, 2011, 2012, 2013, 2014, 2015, nor will there be any in 2016, owing to economy measures caused by Spain's dire financial crisis. Anyway, much of the money we did receive was earmarked for costly infrastructure, dating, or other analyses at international centres. We rely on our field helpers to keep the fieldwork going. For attendance at one full 21-day session your contribution is rated at 50 euros a day for bed, light breakfast, mid-morning sandwich, cooked lunch, cooked supper, laundry, instruction, transport between base camp and site, excursions, transport between Murcia Airport to our base on official pick-up and set-down dates, 2015 membership of MUPANTQUAT (attendance at both sessions entitles you to a reduction to 45 euros a day; first-time attendance for less than a full 21-day session is rated at 60 euros a day). In order to guarantee your reservation of a place a non-returnable deposit is required and because of that you might want to take out holiday insurance in case of last-minute inability to come. Deposits have to be non-returnable, alas, because we are in a holiday-resort area with flights that are heavily booked well in advance of the July-August high summer season. So even if we have someone on a waiting-list when you drop out, that person might not be able to book a flight only a very few weeks before the session begins. This means we might well have to use deposited moneys in order to try to tempt one of our local undergrads to take your place instead of taking a well-paid vacation job in a bar or restaurant beside the packed beaches or at a golf resort, because, in order to have adequate help on site at all times so that we can carry out our excavations efficiently we need always to have on site a basic minimum number of people, below which we cannot work smoothly.

I and our staff look forward to seeing some of you again this year,

Yours truly

Michael Walker

YOU CAN CONTACT ANY OF US at <mupantquat@gmail.com> or <info@mupantquat.com> or individually as below, preferred email addresses are shown by asterisk*:

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SOME RECENT OR FORTHCOMING SIGNIFICANT PUBLICATIONS IN ENGLISH ABOUT WORK AT OUR SITES THAT MAY WELL INTEREST YOU (pdfs of most available on request):

- 2016 (in press, publication expected in 2016) E.Trinkaus, M.J.Walker, Eds., *The People of Palomas. The Neandertals from the Sima de las Palomas del Cabezo Gordo, Southeastern Spain*. Texas A&M University Press, College Station, Texas, USA
- 2016 (forthcoming, currently being edited by the publisher Oxbow Books in preparation for going to press in 2016). M.J.Walker (coordinator), *How the Earliest Cave-Folk of South-East Spain were Dug Up: A journey full of archaeological and anthropological surprises. A book put together by the team excavating under the direction of Michael J. Walker at the sites of Cueva Negra del Estrecho del Río Quípar (the Black Cave of the River Quípar gorge) near Caravaca de la Cruz, Murcia, Spain, and Sima de las Palomas del Cabezo Gordo (Dove Hole on Cabezo Gordo hill) near Torre Pacheco, Murcia, Spain*. Oxbow Books, Oxford.
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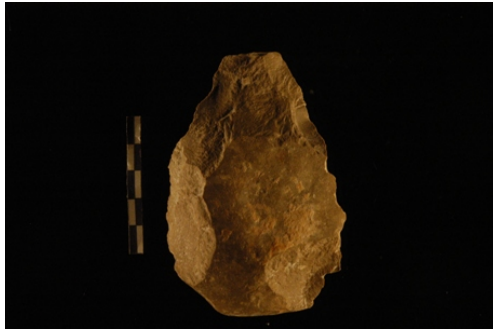
Field School for Quaternary Palaeoanthropology and Prehistory of Murcia, S.E. Spain

27th Field Season 2016

June 30th – July 21st 2016 at Cueva Negra del Estrecho del Río Quípar (Session 1),
July 21st – August 11th 2016 at Sima de las Palomas del Cabezo Gordo (Session 2)

Director: Michael Walker,
DPhil, BM, BCh, MA, DipPreArch, FSA
Emeritus Professor of Physical Anthropology
Department of Zoology and Physical Anthropology,
Biology Faculty, Campus Universitario de
Espinardo, Universidad de Murcia, 30100 Murcia,
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Cueva Negra hand-axe



Sima de las Palomas Neanderthal child skull

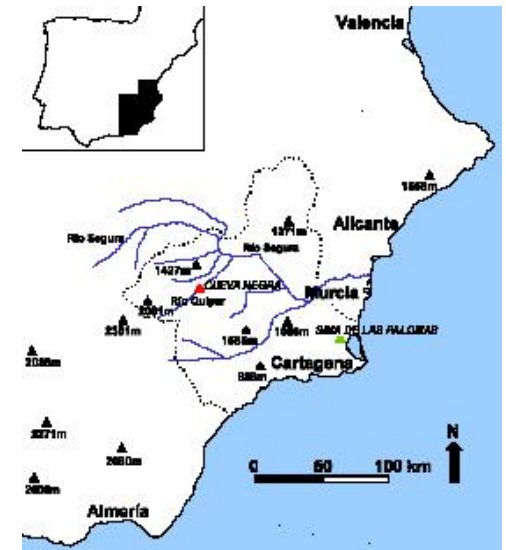
Excavation has been ongoing for 27 years at these two sites. Cueva Negra has definite signs of fire, a final Early (i.e. Lower) Pleistocene fauna and Acheulian and Levallois-Mousterian Palaeolithic artefacts in a sedimentary deposit from a time somewhere between 780,000 and 990,000 years ago according to both biostratigraphy and now palaeomagnetism. Sima de las Palomas has >300 skeletal parts (teeth, bones) of 9 or 10 Neanderthal individuals, including 3 articulated skeletons one of which is 85% complete from between 60,000 and 40,000 years ago, an early Late (i.e. Upper) Pleistocene fauna and Mousterian Palaeolithic artefacts, dated by ¹⁴C, U-ser, OSL and ESR.

Helpers are invited for the 2016 summer field season. All applications are considered sympathetically. You need not have archaeological experience. To apply, just send an email with brief cv after going to our MUPANTQUAT web-page, clicking there on FIELD SCHOOL and then on "BRIEFING YOU" (there's no application form to fill in as we keep paperwork to a minimum). The Murcian Association for the Study of Palaeoanthropology and the Quaternary (MUPANTQUAT) coordinates the Field School and excavations and issues your Certificate of Attendance (we also sign any required forms you bring from your university).

While at Cueva Negra we stay at the residential Ascrúz school (which has its own kitchen staff) at Caravaca de la Cruz. While at Sima de las Palomas we put bunks in the school in Dolores de Pacheco and take our meals in the restaurant of the village civic centre. At both places, you must bring sheets, pillow-slip, towel, soap and shower-gel. Summer is hot in Murcia: you'll get a chance to swim. Bring light work clothes and flat-soled light footwear for Cueva Negra but bring work boots for Sima de las Palomas. Bring sun-hats, sun-glasses, sun-cream, swimmers. If you've a driver's licence, bring it and help us with driving.

Ryanair flies daily to Murcia-San Javier Airport from London (Luton and Stansted). Easyjet flies (maybe only some days a week) from Gatwick, Bristol and Newcastle. Other budget airlines also fly here from the UK and other European countries. A new Murcia Airport has been built but is not yet open, though if flights land there in 2016 you will be met there, so don't worry. Provided we have their flight details in advance we ferry our helpers (free of charge) between Murcia Airport and our field headquarters who arrive on Thursday June 30th or who arrive or depart on Thursday July 21st, or leave on Thursday August 11th. Caravaca is 100 km from the airport, but Dolores de Pacheco is only 6 km from it. We run from Tuesdays to Tuesdays as we often have USA helpers flying into Madrid who need to get connecting weekday flights to Murcia. Travellers by train on June 30th or July 21st can probably be also met by us. For Cueva Negra, train-travellers should arrive at Calasparra railway station (Madrid-Cartagena line) on June 30th and leave on July 21st. For Sima de las Palomas, train travellers should arrive at Balsicas-Mar Menor railway station (Madrid-Cartagena or Barcelona-Cartagena lines) on July 21st and leave on August 11th. Other travellers must make their own arrangements to get to our headquarters at Caravaca or Dolores de Pacheco. We do not meet people at Alicante International Airport, whence travellers can take a "Costa Cálida" bus to Murcia, and then buses from Murcia bus station, either to Caravaca (for Cueva Negra), or to San Javier or Los Alcázares which are 5 km from Dolores de Pacheco (for Sima de las Palomas).

Daily routine: we rise at 7 a.m. and after a light breakfast we excavate from 8 a.m. till 2 p.m. with a mid-morning sandwich. A cooked lunch at 3 p.m. is followed by a nap. We sort finds from 5 p.m. till 9 p.m. when we have a hot dinner. In each 3-week period, there are talks and seminars about our work and human evolution, and we also visit local places of interest. The programme is thus based on a 3-week Session (if you stay for a shorter time you'll miss part of the programme). The normal contribution from helpers staying for a full Session corresponds to €50 euros (€50) a day; covering instruction, board, lodging, and local transportation, or €45 a day when both full sessions are attended (first-time participants staying for less than one full session should contribute €60 a day). To guarantee a place you must send a non-returnable deposit, preferably by May 1st 2016, of €250 (euros) per each 7 days of intended stay. You pay the balance on arrival. You must arrange your own health and personal accident insurance cover beforehand, holiday/travel insurance if desired, and sign an indemnity form on arrival. EU residents should bring the EU card from their country entitling them to public health care in other EU Member States.



Field School for Quaternary Palaeoanthropology and Prehistory of Murcia, S.E. Spain.
BASIC INFORMATION

Organization:: Murcian Association for the Study of Palaeoanthropology and the Quaternary, MUPANTQUAT

Session 1: Thurs Julne 30 – Thurs July 21, 2016, at Cueva Negra del Estrecho del Río Quípar (Caravaca, Murcia, Spain).

Session 2: Thurs July 21 – Thurs August 11, 2016, at Sima de las Palomas del Cabezo Gordo (Torre Pacheco, Murcia, Spain).

Contact: Professor Michael J. Walker, Department of Zoology and Physical Anthropology, Biology Faculty, Murcia University, 30100 Murcia, Spain.

Emails mjwalke@gmail.com; info@mupantquat.com

Further information : <http://www.mupantquat.com>

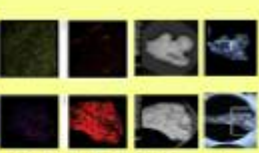
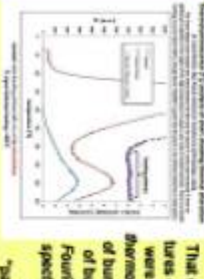
Description	Excavation and instruction at Pleistocene Palaeolithic sites with hominid remains: Cueva Negra: late-Early-to-early-Middle Pleistocene transition about 800,000 years ago; signs of fire; Acheulo-Levalloiso-Mousteroid palaeolithic implements; Sima de las Palomas: early Late (i.e. Upper) Pleistocene about fifty-thousand years ago, with abundant Homo neanderthalensis skeletal remains and Mousterian palaeolithic implements.
Periods	Session 1, June 30 – July 21, 2016; Session 2, July 21 – August 11, 2016.
Country	Spain
Locality	Session 1: Cueva Negra del Estrecho del Río Quípar (Caravaca, Murcia, Spain); Session 2: Sima de las Palomas del Cabezo Gordo (Torre Pacheco, Murcia, Spain)
Travel	Participants will be picked up by our staff at Murcia-San Javier Airport in the late afternoons of June 30 and July 21 to be driven to our bases, and driven back to it in the early afternoons of July 21 and August 11. Participants wishing to make alternative travel arrangements should consult us beforehand, but it mayn't be possible to meet you so you may have to make your own way to our bases.
Duration	Two three-week sessions. In order to get the most out of their stay we strongly recommend participants to stay for one full session at least.
Age	Minimum 18 years
Qualifications	Previous experience is not essential though preference is given to undergraduates and graduates in appropriate subject areas.
Work	All participants take part in excavation and cleaning and sorting finds, and will receive both practical instruction and talks about our research and about human evolution and Palaeolithic archaeology in the Pleistocene.
Language	English (any knowledge of Spanish is also useful).
Accom.	Bunks in schools with showers etc. Light breakfast, mid-morning sandwich, cooked lunch, cooked evening meal. Vegetarian and kosher menus are NOT available. Bring your own sheets and towel.
Contribution	FOR A COMPLETE SESSION: 50 euros per day includes bed, meals, instruction, local travel from airport and back, daily travel from our base to site and back, official excursions. You must pay your own air fares to Murcia-San Javier Airport and personal expenses. FOR TWO COMPLETE SESSIONS: 45 euros per day. FOR LESS THAN 21 days: 60 euros per day.
Application	<i>There is no application form: just send an email to mjwalke@gmail.com and you MUST attach a 1-page (brief) c.v. which MUST include (1) your full name, (2) date of birth, (3) nationality and passport number, (4) permanent home address, (5) address for correspondence, (6) contact phone number(s) and email address(es).</i> If that information is not sent, you probably will not get a reply from us. Visit our web-site http://mupantquat.com , save or print out a long download called <i>Briefing You</i> and read it carefully. A non-returnable deposit in advance is required of 250 euros per 7 days of intended stay, with balance payable on arrival. Preference is given to applicants wishing to stay for a full 3-week session whose deposits are received before May 1 st 2015.
Notes	Each session includes one full-day excursion to other nearby sites of archaeological interest. We issue attendance certificates with number of hours of practical experience and instruction. Although US college credit is NOT available from us, undergrad US college students often can arrange beforehand with their faculty professors to gain credit for participation by presenting papers about it after their return home and we are willing to assist in orientating them during their period on site. We regard all of you as <i>field helpers</i> and in 2016 your contribution will include automatic 2016 membership of MUPANTQUAT. We appeared in the PBS-NOVA television documentary " <i>Decoding Neandertals</i> " that was shown in January 2013 in the USA: to see Sima de las Palomas and our Neanderthal woman Paloma go to http://www.youtube.com/watch?v=3nH1fqd0Ryo

Playing with Fire: Evidence of fire at the late Early Pleistocene Palaeolithic site of Cueva Negra del Estrecho del Río Ojupar

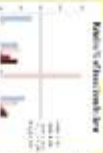
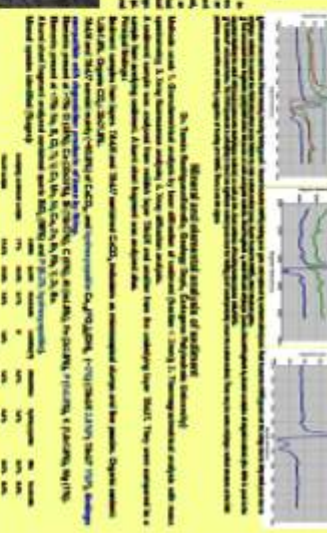
Waters, M.J. (unpublished author e-mail: m.j.waters@paleoanthropology.com), Austin, D.J., Arguñales, D.P., García-Rodríguez, C., García-Rodríguez, M., López-González, A., Martín-Serra, J., Ortega-Pacheco, J., Párrizas, S.L.P., Párrizas, D., Rodríguez-Casas, T.V., Sánchez-González, J.C., and Serrano, A.J.C.†



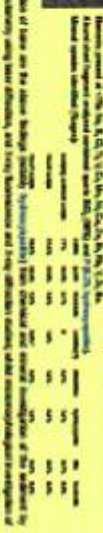
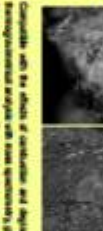
Evidence that fire had affected not only bone fragments but also Palaeolithic chert artifacts was uncovered first in 2011 during excavation of a layer ~4.5 m below the top of the sedimentary sequence, 5 m inside from the entrance, and more burnt remains have been excavated in the same layer in 2012, 2013 and 2014. Charred bone and numerous white calcined bone fragments include some that show conformed long-bone typical of circumferential shrinkage after thermal volatilization of organic components at about 800-900°C (Llanwern, 1999 parv.). Among abundant thermally-altered chert fragments a nodule was excavated that had split open with several minute razor-sharp splinters still in place and a split surface showing pocket-marked rippling typically seen when heating chert produces "jagged" fracture surfaces. An artificially-struck flake cracked open by "thermal shock" was excavated with sharp conchoidal fragments in place. Following thermal alteration those two flints cannot have undergone displacement of more than a few centimeters. In the 2 m² of deep-dripping sediment uncovered to date, combustion had affected over 300 fragments of bones of small and large mammals, birds and tortoise, and about 150 of chert which includes abundant small splinters indicative of chert shattering at about "700-800" C (cf. Llanwern, 1999).



Thermal expansion of quartz at different temperatures



Thermal expansion of quartz at different temperatures



Discussion.

Rodríguez and Wib, 2011, wrote: "Heated flints in a cave site are unlikely to be the result of natural wild fires and may be considered a reliable indicator of anthropogenic fire if (i) there is no evidence of reworking of sediments, slope wash, or debris flow entering the cave;

(ii) the excavator notes a localized concentration of heated flint and bones; and

(iii) only a small proportion of heated flint occurs at the site. This combination of evidence suggests a good probability of localized fire." CUENA NEGRA TICKS ALL 3 BOXES.

Sparks from a bush the outside are unlikely to have set slight brushwood accidentally-lying wall inside, so as to produce such temperatures. Perhaps smouldering brands left by bush fires outside were carried inside so fire could be kindled when rain or wind would not extinguish it; the also might have been made by striking dent to produce sparks. No flint or burnt stones have been found, hence it is unlikely there was any ability to control the heat. Nevertheless, the dentists of Cueva Negra could well have been less skilled of the outside than were animals they saw fleeing from it. That they have had time to play with fire in order to drive animals towards natural death-traps, such as snares, enabling dismemberment and roasting, Wierzbian (2009) writes that archaeological "hints from the Lower Palaeolithic tell us only that... control of fire was a possibility, not a certainty" and "The inability of the archaeological evidence to tell us when humans first controlled the process us to biology... At some time our ancestors' anatomy changed to accommodate a cooked diet. The change must mark when cooking became a daily occurrence, because used that our ancestors would have sometimes had to resort to eating their food raw – and therefore could not adapt to cooking. The time when our ancestors became accustomed to cooked food also marks the time when fire was controlled as attributable that it is *not* a 'flint artifact'." It is, line with arguments that heating foodstuffs had irreversible physiological consequences for human evolution, its possible incidence on human cognition in late Early Pleistocene Europe is intriguing in relation to localizing aspects of Palaeolithic versatility at Cueva Negra (Wierzbian, 2009; Wierzbian et al., 2012; Zhai et al., 2011). The antiquity of Palaeolithic fire at Cueva Negra must be interpreted in relation to considerations for the evidence for the at other late Early Pleistocene sites. For example, see Greenfield and Greenfield, 2012; Wierzbian et al., 2012; Greenfield et al., 2004; James 1989; Wierzbian et al., 2015.

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Neanderthal attention to the dead at Sima de las Palomas del Cabezo Gordo (Murcia, Spain)



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Flexed knees and elbows, with hands raised up beside the face, of both a young Neanderthal woman (SP96) and a child beneath her (SP97), suggest intentional arrangement before *rigor mortis* developed. Excavation discovered the skeletons in anatomical connexion, their heads to W, lying within cemented rocks 1.5-2 m below the rock overhang above the karstic shaft (sima); there was no burial pit. Beneath the child lay articulated parts of another adult skeleton with an extended elbow (SP92). Near the child were 2 articulated leopard paws. A peristomous interpretation is that a single anthropogenic process had impinged on both human and leopard body parts such that the aforementioned bones show neither charring nor cut-marks. Charred articulated horse ankle bones, 9 Mousterian flint tools, 12 flakes and 100 fragments of knapping waste were excavated nearby. A direct U-series date on Neanderthal bone of $54,100 \pm 7700$ BP (APSLP-1) is in line with excavated material dated to $51,000 \pm 2500$ (APSLP-6) by U-ser and $54,700 \pm 4700$ BP (X2509) by OSL, as well as a U-ser sample from near SP1/SP92 of $56,000 \pm 13000$ -10000 (though yet another U-ser date and two ^{14}C are likely underestimates; Walker et al., 2012). An intriguing contrast exists between the 3 nearly-complete articulated skeletons and sparse remains of 6 other Neanderthal individuals known from the site, including some burnt bones (a burnt leopard temporal bone could imply Neanderthal dominance). The skeletons were separated by an almost impenetrable conglomerate bed from underlying sediments containing yet more Mousterian tools and abundant fragments of burnt animal bones.

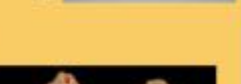
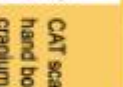
SP96 ("Paloma") was a short 16-20 year-old woman, lying on her left side, with skeletal parts connected anatomically (rib cage, shoulder and pelvic girdles, flexed knees and elbows, hands beside her crushed skull and mandible, altogether >70 different bones exist, including all major limb bones except for her feet; Walker et al., 2011).



Excavation area and deep SP of 6, showing bones in situ



SP96 "Paloma", articulated and reconstructed



Arranging cadavers before *rigor mortis* develops implies Mousterian attention paid to flexing knees and elbows, with hands raised to the face, among Neanderthals (Requardou; Shanidar 7) and anatomically modern humans (Shihul 4 and 7), though knee flexion is more widespread (Dufrenoy, 1993, esp. p. 233). The completeness of SP96 "Paloma" highlights comments both by Anne-Marie Tillier (1982), namely, "La présence de squelette ou d'une grande partie du squelette en connexion n'est pas un phénomène naturel et il ne semble pas indispensable de mettre en évidence une structure artificielle pour envisager un dépôt volontaire du corps..." (cf. Pettit, 2002), and also by Erik Trinkaus (1989) who remarked, in response to Robert Gergoff's scepticism about some allegedly intentional Neanderthal burials, that several Neanderthal articulated skeletons "managed to be preserved in highly accessible Upper Pleistocene rock-shelters and caves in near-anatomical position and over-all skeletal-part frequencies identical to those of recent cemetery samples... These partial skeletons retain many fragile elements largely intact, despite the ubiquitous presence of carcass-destroying carnivores... the lack of evidence in most cases for sufficiently rapid natural sedimentation rates to shield them from scavengers, and the absence of comparably preserved nonhominid skeletons in similarly accessible Upper Pleistocene localities" – Trinkaus was referring to whole animal skeletons which our leopard paws are anything but!