



climate and humans

Depicting environmental scenarios
for human evolutionary changes
and cultural collapses

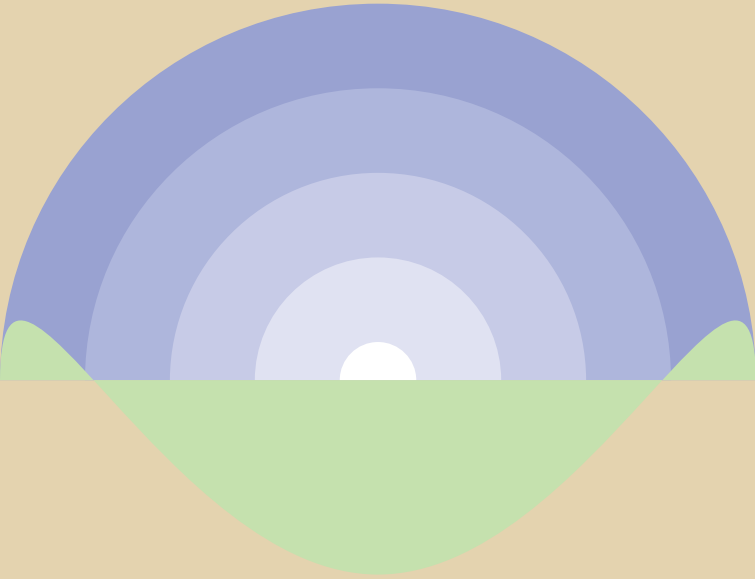
clima y humanos

Trazando escenarios ambientales para los procesos
de evolución humana y colapso cultural

AUDITORIO Y CENTRO DE CONGRESOS VÍCTOR VILLEGAS

SEMINARIO - SEMINAR

MURCIA
October 23-25th
2007



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Aim

The aim of this seminar is to provide a forum for scientists who have at some point in their careers touched on the marvellous complexity in the relationship between environmental change and biological or cultural evolution.

A topical issue

An anthropological theme will be central to the discussions, so that a surge of ideas that will favour future initiatives that may clarify patterns and processes in human evolution is expected. This has become a topical issue ever since the scientific community has realized that palaeoecology may provide useful inputs for the management of natural resources and environmental policies.

Profile of participants

Participants come from a broad spectrum of disciplines, including palaeoanthropology, physical and medical anthropology, palaeoecology, palaeontology, palaeobotany, physical geography, archaeology, climatology, geodynamics and geochemistry, environmental sciences, and genetics. In addition, discussants include credited scientific reporters.

Objetivo

Este Seminario tiene la pretensión de servir de encuentro a científicos que se hayan topado en algún momento de su carrera con la maravillosa complejidad de las relaciones entre cambio ambiental y evolución biológica o cultural.

Una temática de actualidad

La temática antropológica será central en las discusiones, de manera que esperamos que la tormenta de ideas favorezca iniciativas y futuras sinergias en la dilucidación de las pautas y procesos de evolución humana. El tema es también de actualidad porque se está comprobando que el desarrollo de modelos paleoecológicos tiene aplicaciones en la gestión de recursos naturales y políticas medioambientales.

Perfil de los participantes

Los participantes incluyen un amplio espectro de disciplinas y especialidades, como la paleoantropología, la antropología física y médica, paleoecología, paleontología, paleobotánica, geografía física, arqueología, climatología, geodinámica, geoquímica y genética. Igualmente contaremos con la participación de periodistas científicos acreditados en la materia.

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PROFILE OF PARTICIPANTS

Speakers

PONENTES

Alfonso Arribas



Permanent research position in the Museo Geominero, Instituto Geológico y Minero, Madrid.

Alfonso Arribas es un paleontólogo con dilatada experiencia en dirección de excavaciones sobre mamíferos fósiles. En estos momentos ejerce de investigador titular y curator de la colección de vertebrados en el Museo Geominero y dirige las excavaciones del sitio plioleistoceno de Fonelas, en la Cuenca de Guadix-Baza, Granada.

Speciality: palaeontologist/geologist.

Research interests: Mammal faunas in the Pliocene-Quaternary boundary, taphonomy of vertebrate fossil assemblages. He conducts the excavations in the renowned site of Fonelas, Guadix Basin, Granada.

Selected publications

- Viseras C, Arribas A et al. 2006. A large mammals site in a meandering fluvial context (Fonelas P-1, Late Pliocene, Guadix Basin, Spain). Sedimentological keys for its palaeoenvironmental reconstruction. *Palaeogeography, Palaeoclimatology, Palaeoecology* 242, 139-68.
- Arribas A, Palmqvist P. 2005. Hyenids as a bone collecting agency in the Pleistocene fossil record of Spain: an overview of the taphonomy of Venta Micena and remarks on the paleobiology of the gigant hyaena *Pachycrocuta brevirostris*. En: Horwitz (ed), *Hyenids in the circum-Mediterranean: a taphonomic perspective*. Prehistoire et Anthropologie Méditerranéennes.
- Palmqvist P, Arribas A et al. 2003. Paleoecological reconstruction of a Lower Pleistocene large mammal community using biogeochemical ($d^{13}C, d^{15}N, d^{18}O, Sr:ZN$) and ecomorphological approaches. *Paleobiology* 29, 205-29.
- Queralt S, Arribas A. et al. 2003. Magnetostratigraphic study of a Plio-Pleistocene section in Southern Spain: the record of transitional field or a complex overprint? *Geophysical Research Abstracts* 5, 90-7.
- Arribas A, Palmqvist P. 2002. The first human dispersal to Europe: remarks on the archaeological and palaeoanthropological record from Orce (Guadix-Baza basin, southeastern Spain). *Human Evolution* 17, 55-78.

Geoff Bailey



Professor of Archaeology in the University of York

Geoff Bailey se licenció en la Universidad de Cambridge, donde trabajó en el Departamento de Arqueología hasta 1996 para pasar a dirigir el departamento homólogo de la Universidad de Newcastle hasta 2004. A través del proyecto KLITHI, Geoff fue pionero en la integración de registros arqueológicos, geológicos y paleocológicos en un marco interdisciplinar. En los últimos años, ha focalizado su trabajo en el terreno de la arqueología subacuática, dirigiendo excavaciones en Inglaterra, Dinamarca, España, Grecia, Australia, África y Península Arábiga.

Speciality: archaeologist.

Research interests: Palaeolithic and Mesolithic Archaeology, Quaternary landscape history, palaeoeconomy, and the archaeology of prehistoric coastlines. He is especially interested in the ways in

which human populations have responded to the geological instabilities of the physical landscape, particularly in tectonically active and coastal environments, and how that engagement has shaped our evolution and expansion as a species and subsequent developments in land use and human-environment interactions.

Selected publications

- Bailey G, Spikins P. 2007. *Mesolithic Europe*. Cambridge University Press.
- Milner N, Craig O, Bailey G. 2007. *Shell middens in Atlantic Europe*. Oxbow Books, Oxford.
- Bailey G. 2007. Time perspectives, palimpsests and the archaeology of time. *Journal of Anthropological Archaeology* 26, 198-223.
- Bailey G. et al. 2000. *Human ecodynamics*. Oxbow Books, Oxford.
- Bailey G. 1997. *Klithi: Palaeolithic settlement and Quaternary landscapes in northwest Greece*. McDonald Institute for Archaeological Research, Cambridge.

José María Bermúdez de Castro



Research Professor in the Centro Nacional para la Investigación sobre Evolución Humana (CENIEH), Spanish Ministry of Science, Burgos.

José María Bermúdez es uno de los directores de las excavaciones de Atapuerca y coordina las actividades de investigación en el CENIEH (Centro Nacional para el Estudio de la Evolución Humana), una apuesta del Ministerio de Ciencia y Tecnología para canalizar a nivel nacional investigaciones paleoantropológicas y sobre paleoecología humana.

Speciality: palaeoanthropologist.

Research interests: study of human fossils with the aim of obtaining information about their biology and getting data for taxonomic and phylogenetic studies, and proposals of evolutionary sceneries. Currently active on dental anthropology, carrying out research on 2D and 3D morphometry and development of dentition in hominins of the Pliocene and Pleistocene.

Selected publications

- Parés JM, Bermúdez de Castro JM et al. 2006. Matuyama-age lithic tools from the Sima del Elefante site, Atapuerca (northern Spain). *Journal of Human Evolution* 50, 163-9.
- Martinón M, Bermúdez de Castro JM et al. 2006. Hominin lower second premolar morphology: evolutionary inferences through geometric morphometric analysis. *Journal of Human Evolution* 50, 523-33.
- Lozano M, Bermúdez de Castro JM et al. 2004. Cutmarks on fossil human anterior teeth of the Sima de los Huesos Site (Atapuerca, Spain). *Journal of Archaeological Science* 31, 1127-35.
- Bermúdez de Castro JM et al. 2003. Gran Dolina-TD6 versus Sima de los Huesos dental samples from Atapuerca: evidence of discontinuity in the European Pleistocene population? *Journal of Archaeological Science* 30, 1421-8.
- Bermúdez de Castro JM et al. 2001. Dental size variation in the Atapuerca-SH Middle Pleistocene hominids. *Journal of Human Evolution* 41, 195-209.

José Carrión



Professor in Evolutionary Botany, Faculty of Biology, University of Murcia.

José Carrión es un palinólogo con formación en botánica evolutiva y amplios intereses en paleoecología del Cenozoico y paleoambientes en sitios arqueológicos, sobre todo con importancia en evolución humana. Ha sido colíder y representante nacional del Programa PAGES (Past Global Changes) transecto PEPIII.

Speciality: palynology.

Research interests: Cenozoic palaeoecology, long-term dynamics of Mediterranean forests, historical biogeography and biodiversity, palaeoenvironments of arid and semi-arid areas, taphonomy of palaeobotanical assemblages, evolutionary botany.

Selected publications

- Finlayson C, Carrión JS. 2007. Rapid ecological turnover and its impact on Neanderthal and other human populations. *Trends in Ecology and Evolution* 22, 213-22.
- Carrión JS et al. 2003. Fire and grazing are contingent on the Holocene vegetation dynamics of Sierra de Gádor, southern Spain. *The Holocene* 13, 839-49.
- Carrión JS. 2002. Patterns and processes of Late Quaternary environmental change in a montane region of southwestern Europe. *Quaternary Science Reviews* 21, 2047-66.
- Carrión JS et al. 2001. Abrupt vegetation changes in the Segura Mountains of southern Spain during the Holocene. *Journal of Ecology* 89, 783-97.
- Carrión JS, Scott L. 1999. The challenge of pollen analysis in palaeoenvironmental studies of hominid beds. The record from Sterkfontein Caves. *Journal of Human Evolution* 36, 401-8.

Peter de Menocal



Professor of Earth and Environmental Sciences, Columbia University, New York.

El trabajo de Peter de Menocal ha sido crucial para la conceptualización de las relaciones entre cambio climático, recambio faunístico y procesos de evolución humana, sobre todo en sus fases iniciales dentro del continente africano. Su trabajo tiene también relevancia en el campo de los colapsos culturales asociados a catástrofes ambientales.

Speciality: paleoceanographer/marine geologist.

Research interests: Pliocene-Pleistocene African palaeoenvironmental changes and their relationships to evolutionary junctures in human evolution as well as understanding the role of tropical oceans in the mid-Pliocene onset and amplification of glacial cycles. Current research projects include developing high-resolution records of Holocene changes in North Atlantic surface and

deep ocean circulation and understanding the Holocene history of the northwest African monsoonal system.

Selected publications

Fedorov A, de Menocal P et al. 2006. The Pliocene paradox: mechanisms for a permanent El Niño. *Science* 312, 1485-9.

De Menocal P et al. 2000. Coherent high- and low-latitude climate variability during the Holocene Warm Period. *Science* 288, 2198-202.

Bond G, de Menocal P et al. 1997. A pervasive, millennial-scale cycle in the North Atlantic Holocene and Late Glacial climates. *Science* 278, 1257-66.

de Menocal P. 1995. Plio-Pleistocene African climate. *Science* 270, 53-9.

Bloemendal J, de Menocal P. 1989. Evidence for a change in the periodicity of tropical climate cycles at 2.4 Myr from whole-core magnetic susceptibility measurements. *Nature* 342, 897-9.

Darren Fa



Deputy Director, Education, Research and Survey Officer at The Gibraltar Museum.

Darren es un ecólogo cuantitativo muy reconocido en el panorama internacional por sus trabajos sobre estructura de hábitat y complejidad en la diversidad y distribución de especies, con énfasis en sistemas fractales y dinámicas caóticas.

Speciality: biological oceanography.

Research interests: Multi-scale distribution patterns of biodiversity, Quaternary climatic variability, eustatic fluctuations and mass extinctions, especially the Neanderthal-Modern transition.

Selected publications

- Guerra-García JM, Fa D et al. 2003. Extinction risks and harbours as marine reserves? *Bulletin of the Malacological Society of London* 41, 9.
- Fa D, Fa JE. 2002. Species diversity, abundance and body size in rocky-shore mollusca: a twist in Siemann, Tilman & Haarstad's parabola? *Journal of Molluscan Studies* 68, 95-100.
- Fa D et al. 2001. The underwater archaeological and historical heritage of Gibraltar. *Almoraima* 25, 429-36.
- Fa DA. 2000. Ecological and behavioural correlates of range expansion and contraction I: Spatial perception at different scales. *Proceedings of the 6th Annual Meeting, European Association of Archaeologists, Lisboa*, pp 95-6.
- Fa DA. 1996. How long is the coastline of Gibraltar? Fractals and some conservation implications. *Almoraima* 15, 273-81.

Clive Finlayson



Professor and Director Heritage Division at The Gibraltar Museum.

Clive Finlayson es uno de los autores de mayor reputación en la literatura internacional sobre la ecología de los neandertales. Su reciente artículo en *Nature* continúa la tendencia de algunos libros previos y fija definitivamente la noción de que esta especie tuvo una perduración multimilenaria en el extremo sur de la Península Ibérica.

Speciality: zoology and human ecology.

Research interests: the Neanderthal extinction, agent-based modelling of Pleistocene hominin populations, climate and ecological dynamics in the Quaternary and their impact on hominin populations, multi-scale spatio-temporal distribution patterns, human ecology.

Selected publications

- Finlayson C, Carrión JS. 2007. Rapid ecological turnover and its impact on Neanderthal and other human populations. *Trends in Ecology and Evolution* 22, 213-22.
- Finlayson C et al. 2006. Late survival of Neanderthals at the southernmost extreme of Europe. *Nature* 443, 850-3.
- Finlayson C. 2005. Biogeography and evolution of the genus *Homo*. *Trends in Ecology and Evolution* 20, 457-63.
- Finlayson C. 2004. *Neanderthals and Modern Humans*. Cambridge University Press, Cambridge.
- Finlayson C. 1999. Species abundances across spatial scales. *Science* 283, 1979.

Geraldine Finlayson



Cultural Researcher Officer at The Gibraltar Museum.

Geraldine aporta una perspectiva neontológica a través de sus modelos sobre las pautas espacio-temporales de distribución de especies que pueden ser definitorias del cuadro paleoambiental en momentos críticos de la evolución y extinción de los neandertales.

Speciality: biogeographer.

Research interests: relationships between climate, vegetation, landscape features and biodiversity; spatio-temporal distribution patterns of vegetation and animals, underwater archaeology.

Selected publications

- Finlayson G et al. 2007. Caves as archives of ecological and climatic changes in the pleistocene—the case of Gorham’s Cave, Gibraltar. *Quaternary International* 11.
- Fa D, Finlayson C, Finlayson G. 2005. *Gibraltar: its prehistory and current considerations*. CHERM, Kenitra.
- Finlayson G et al. 2002. The breeding distribution of Chiffchaff *Phylloscopus collybita brehmii* and Bonelli’s Warbler *Phylloscopus bonelli* in southern Spain. *Almoraima* 27, 23-6.
- Finlayson C, Fa D, Finlayson G. 2000. Biogeography of human colonizations and extinctions in the Pleistocene. *Memoirs of GIBCEMED* 1, 1-69.
- Finlayson C, Finlayson G, Fa D. 2000. *Gibraltar during the Quaternary*. Gibraltar Government Publications, Gibraltar.

Francisco Giles Pacheco



**Director of Museo Arqueológico Municipal,
Puerto de Santa María, Cádiz.**

Paco Giles es un veterano de la excavación arqueológica y paleontológica, con una intuición extraordinaria y muchos años de trabajo de campo en un buen número de yacimientos de Europa y África.

Speciality: prehistory.

Research interests: expertise in archaeological excavation of Palaeolithic, Neolithic and Bronze-age settlements in Europe and Africa. For the last years, he has been conducting the excavations of the Gibraltar Caves.

Selected publications

- Finlayson C, Giles-Pacheco F et al. 2006. Late survival of Neanderthals at the southernmost extreme of Europe. *Nature* 443, 850-3.
- Finlayson C, Giles-Pacheco F et al. 2004. Did the moderns kill off the Neanderthals? *Quaternary Science Reviews* 23, 1205-9.
- Giles-Pacheco F et al. 2003. The effect of climate change on the distribution of humans in southern Iberia in the late Quaternary. In: Ruiz Zapata MB et al. (eds.), *Quaternary climatic changes and environmental crises in the Mediterranean Region*, pp 67-79. INQUA Commission on Human Evolution, Universidad de Alcalá, Alcalá de Henares.
- Finlayson C, Giles-Pacheco F et al. 1997. Integrative multi-scale analysis of the impact of the drainage of the La Janda lake (Cádiz Province, Spain) and a model for its sustainable regeneration. In: Usó JL et al. (eds.), *Ecosystems and Sustainable Development. Advances in Ecological Sciences* 1, 203-12.
- Rodríguez-Vidal J, Giles-Pacheco et al. 1994. *Gibraltar during the Quaternary*. AEQUA Monographical Series.

Carles Lalueza-Fox



Assistant professor, Biomedical Research Park,
University of Barcelona.

Carles hizo su estancia postdoctoral en las Universidades de Cambridge y Oxford, ha secuenciado el primer genoma mitocondrial completo de una especie extinguida y las primeras secuencias de DNA mitocondrial de un Cromagnon. En la actualidad está analizando el DNA fósil de nueve individuos de Neandertal encontrados en el Sidrón (Asturias). Igualmente, colabora en el *Proyecto Genoma Neandertal* dirigido desde el Instituto Max Planck.

Speciality: genetist with expertise in ancient DNA.

Research interests: study of the mitochondrial genome from extinct species. He has worked on the moa birds from New Zealand, the first Cromagnon mitochondrial sequences, the retrieval of a complete pigmentation gene from mammoths,

and the first retrieval of mitochondrial DNA from an Iberian neandertal from El Sidrón Cave, Asturias.

Selected publications

Lalueza-Fox C et al. 2006. Mitochondrial DNA of an Iberian Neandertal suggests a population affinity with other European Neandertals. *Current Biology* 16, 629-30.

Poinar HN, Lalueza-Fox et al. 2006. Metagenomics to paleogenomics: large-scale sequencing of mammoth DNA. *Science* 311, 392-4.

Lalueza-Fox et al. 2005. Neandertal evolutionary genetics; mitochondrial DNA data from the Iberian Peninsula. *Molecular Biology and Evolution* 22, 1077-81.

Caramelli D, Lalueza-Fox C et al. 2003. Evidence for a genetic discontinuity between Neandertals and 24,000 year-old anatomically modern Europeans. *Proceedings of the National Academy of Sciences USA* 100, 6593-7.

Cooper A, Lalueza-Fox C et al. 2001. Complete mitochondrial genome sequences of two extinct moas clarify ratite evolution. *Nature* 409, 704-7.

Marcia Ponce de León



**Senior Lecturer in the Anthropological Institute,
University of Zurich.**

Los fósiles de humanos son objetos de tal rareza que se hace necesario obtener el máximo de información alterando mínimamente la evidencia material disponible. En este sentido, las habilidades de Marcia han sido una bendición para la paleoantropología. Sus trabajos metodológicos sobre morfometría no invasiva son aplicados en todo el mundo.

Speciality: computer-assisted palaeoanthropologist.

Research interests: combination of methods of medical imaging, computer graphics and rapid prototyping for data acquisition, interactive reconstruction, morphometry and replication of fossil specimens.

Selected publications

- Lordkipanidze D, Ponce de León MS. 2005. The earliest toothless hominin skull. *Nature* 434, 717-8.
- Brunet M, Ponce de León MS et al. 2005. New material of the earliest hominid from the Upper Miocene of Chad. *Nature* 434, 752-5.
- Vekua A, Ponce de León M et al. 2002. A new skull of early *Homo* from Dmanisi, Georgia. *Science* 297, 85-9.
- Ponce de León MS, Zollikofer CPE 2001. Neanderthal cranial ontogeny and its implications for late hominid diversity. *Nature* 412, 534-8.
- Ponce de León MS et al. 2000. Investigation of Neanderthal morphology with computer-assisted methods. In: Stringer et al (eds), *Neanderthals at the edge*, pp 237-48. Oxbow Books, Oxford.

Jim Rose



**Professor of Geography, Royal Holloway,
University of London.**

Jim Rose es Editor principal de la prestigiosa revista *Quaternary Science Reviews* y miembro del comité editorial de *Quaternary Research*, *Boreas* y *Quaternary International*, entre otras. Con anterioridad ha dirigido el *Centre for Quaternary Research* de la Universidad de Londres, ha presidido la *Quaternary Research Association*, ha recibido incontables premios (ej.: Victoria Medal of the Royal Geographic Society, Murchison Award) y participado en casi todas las comisiones internacionales relacionadas con el estudio del Cuaternario. Jim ha sido una fuente inagotable de ideas y un estímulo continuo para muchas generaciones de cuaternaristas.

Speciality: physical geography.

Research interests: a wide range of Quaternary

science and process geomorphology and sedimentology: glacial sediments and landforms, palaeohydrology, palaeopedology, displaced shorelines, glacial stratigraphy, climate and environmental change through the Last Interglacial/Last Glacial in Europe, environmental change and human occupation in Britain.

Selected publications

- Barker G, Rose J et al. 2007. The 'human revolution' in lowland tropical Southeast Asia: the antiquity and behavior of anatomically modern humans at Niah Cave (Sarawak, Borneo). *Journal of Human Evolution* 52, 243-61.
- Gilbertson D, Rose J et al. 2005. Past human activity and geomorphological change in a guano-rich tropical cave mouth: initial interpretations of the Late Quaternary succession in the Great Cave of Niah, Sarawak. *Asian Perspectives* 44, 16-41.
- Barker G, Rose J et al. 2002. Prehistoric foragers and farmers in Southeast Asia: renewed investigations at Niah Cave, Sarawak. *Proceedings of the Prehistoric Society* 68, 147-64.
- Rose J et al. 1999. Early and Middle Pleistocene river systems in eastern England: evidence from Leet Hill, southern Norfolk. *Journal of Quaternary Science* 14, 347-60.
- Rose J et al. 1997. Mid and Late Holocene vegetation, surface weathering and glaciation, Fjallsjökull, Southeast Iceland. *The Holocene* 7, 457-71.

Larry Sawchuk



Professor of Anthropology, Department of Social Sciences, University of Toronto.

Durante más de treinta años, Larry Sawchuk ha estado trabajando en el impacto del estrés climático sobre la población urbana de Gibraltar, un sistema empírico único por su aislamiento y particular interacción con el exterior. Aquí ha desarrollado modelos de mortalidad infantil y esperanza de vida. La contribución de Larry es fundamental para este seminario, puesto que brinda una visión actualista y cuantitativa de las relaciones entre clima y sociedad a una resolución temporal superior a la que puede ofrecer el registro fósil.

Speciality: evolutionary anthropologist.

Research interests: holistic study of humans and non-human primates in their biological, evolutionary, and demographic dimensions.

Particular emphasis on health and disease in urban populations.

Selected publications

Sawchuk LA et al. 2003. Quantifying the colonized/colonist relationship: suicide as a comparative measure of population stress in Gibraltar. *Current Anthropology* 45, 118-24.

Sawchuk LA, Burke, SDA. 2003. Gibraltar and the 1865 cholera epidemic: establishing the ecological context of a crisis. In: Herring DA, Swedlund AC (eds.), *Human biologists in the archives: demography, health, nutrition and genetics in historical populations*, pp 178-215. Cambridge University Press, Cambridge.

Sawchuk LA et al. 2002. A matter of privilege: infant mortality in the Garrison Town of Gibraltar, 1870-1899. *Journal of Family History* 27, 399-429.

Sawchuk LA. 2000. *Deadly visitations in dark times: a social history of Gibraltar*. Government Heritage Publications.

Sawchuk LA, Burke SDA. 1998. Gibraltar's 1804 yellow fever scourge: the search for scapegoats. *Journal of the History of Medicine and Allied Sciences* 53, 3-42.

John Speth



**Professor and Director of the Museum of Anthropology,
University of Michigan**
Associate Editor of the journal *Before Farming*.

John Speth es una mente inquieta. Sus trabajos sobre paleoecología del corredor levantino son bien conocidos. John ha defendido con vehemencia la noción de que la supuesta incompetencia de los neandertales se debe más a una interpretación inadecuada de la ausencia de evidencias sobre muchos aspectos que sí se registran en excavaciones de hombre moderno.

Speciality: antropologist.

Research interests: human palaeoecology in the Levant, economic and demographic changes in prehistoric sites of North America, anthropology and archaeology of hunter-gatherers and ancient farmers, early hominid subsistence strategies.

Selected publications

- Meignen L, Speth JD et al. 2006. Middle Paleolithic settlement patterns in the Levant. In: Hovers E, Kuhn SL (eds), *Transitions before the transition: evolution and stability in the Middle Paleolithic and Middle Stone Age*, pp 149-70. Interdisciplinary Contributions to Archaeology. Springer, New York
- Goren-Inbar N, Speth JD. 2004. *Human paleoecology in the Levantine Corridor*. Oxbow Press, Oxford.
- Speth JD. 2004. News flash: negative evidence convicts Neanderthals of gross mental incompetence. *World Archaeology* 36, 519-26.
- Speth JD. 1989. Early hominid hunting and scavenging: the role of meat as an energy source. *Journal of Human Evolution* 18, 329-43.
- Speth JD, Davis DD. 1976. Seasonal variability in early hominid predation. *Science* 192, 441-5.

John R. Stewart



**Scientific Associate, Department of Palaeontology,
Natural History Museum, London.**

John Stewart es un paleontólogo con interés en paleoecología cuaternaria que ha enfocado su investigación en el estudio de los cambios fisiográficos relacionables con fenómenos de evolución humana y faunística. Sus trabajos sobre el Neandertal dentro del proyecto del Estadio Isotópico 3 son especialmente reconocidos.

Speciality: palaeontologist.

Research interests: a variety of endeavours examining the degree to which past climatic boundaries were significant ecological events and how these affected to human populations. His primary expertise deals with the faunal responses to climatic changes along the Quaternary.

Selected publications

- Stewart JR, Beech M. 2006. The Miocene birds of Abu Dhabi with comments on the likelihood that modern species lived in the Neogene. *Journal of Historical Biology* 18, 103-13.
- Stewart JR. 2005. The ecology and adaptation of Neanderthals during the non-analogue environment of Oxygen Isotope Stage 3. *Quaternary International* 137, 35-46.
- Stewart JR. 2004. Neanderthal-modern human competition? A comparison between the mammals associated with Middle and Upper Palaeolithic industries in Europe during OIS 3. *International Journal of Osteoarchaeology* 14, 178-89.
- Stewart JR. 2003. Comment on “Buffered tree population changes in a Quaternary refugium”: evolutionary implications. *Science* 299, 825.
- Stewart JR, Lister AM. 2001. Cryptic northern refugia and the origins of modern biota. *Trends in Ecology and Evolution* 16, 608-13.

Chronis Tzedakis



**Professor of Global Change Palaeoecology,
School of Geography, University of Leeds.**

Chronis es uno de los paleoecólogos del Cuaternario más activos de los últimos años en el panorama internacional. Sus resultados e ideas sobre las pautas de variabilidad climática natural y sus efectos sobre la biota continentales y marinos están teniendo un importante calado en la comunidad científica de climatólogos, ecólogos, geólogos, biólogos y geógrafos.

Speciality: Quaternary palaeoecologist.

Research interests: study of thick lacustrine sequences in southern Europe to examine vegetation and landscape changes over the last few hundred thousand years. Identification and study of critical periods in the past with minimal anthropogenic influence, in order to establish the patterns and effects of natural climate variability.

Selected publications

- Tzedakis PC et al. 2004. Ecological thresholds and patterns of millennial-scale climate variability: the response of vegetation in Greece during the last glacial period. *Geology* 32, 109-12.
- Tzedakis PC. 2002. Buffered tree population changes in a Quaternary refugium: evolutionary implications. *Science* 297, 2044-7.
- Tzedakis PC. 2003. Timing and duration of Last Interglacial conditions in Europe: a chronicle of a changing chronology. *Quaternary Science Reviews* 22, 763-8.
- Frogley MR, Tzedakis PC, Heaton THE. 1999. Climate variability in NW Greece during the last interglacial. *Science* 285, 1886-9.
- Tzedakis PC. 1993. Long-term tree populations in northwest Greece through multiple Quaternary climatic cycles. *Nature* 364, 437-40.

Christoph Zollikofer



Professor of Anthropology, Anthropological Institute, University of Zurich.

Christoph está dotado de una extraordinaria capacidad para dar una sencilla configuración numérica a problemas de gran complejidad. Es, de hecho, un experto conocido por haber hecho investigables cuestiones de paleoantropología que llevaban décadas sin ser abordadas por la inexistencia de un marco metodológico y teórico adecuado.

Speciality: neurobiologist with expertise in computational morphology.

Research interests: origins and evolution of human morphology and behaviour through a dual task. First, to identify the unique features of humans and reconstruct their evolutionary history. Second, to develop explanations for these novel features based on general biological theories, built up from studies of living and fossil primates and other animals.

Selected publications

- Zollikofer CPE, Ponce de León MS. 2005. *Virtual reconstruction. A primer in computer-assisted paleontology and biomedicine*. Wiley, New York.
- Zollikofer CPE, Ponce de León MS et al. 2005. Virtual cranial reconstruction of *Sahelanthropus tchadensis*. *Nature* 434, 755-9.
- Zollikofer CPE, Ponce de León MS et al. 2002. Evidence for interpersonal violence in the St Césaire Neanderthal. *Proceedings of the National Academy of Sciences USA* 99, 6444-8.
- Brunet M, Zollikofer CPE et al. 2002. A new hominid from the Upper Miocene of Chad, Central Africa. *Nature* 418, 145-51.
- Zollikofer CPE, Ponce de León MS et al. 1995. Neanderthal computer skulls. *Nature* 375, 283-5.

23th October

09:00-9:45. Official opening + Press conference.

9:45-10:30. PETER DE MENOCA. *Investigating the role of tropical ocean temperature changes on African paleoclimate.*

Papel de los cambios de la temperatura marina sobre los climas de Africa y su papel en la evolución humana.

10:30-11:00. Coffee & Tea.

11:00-11:45. CHRISTOPH ZOLLIKOFER & MARCIA PONCE DE LEÓN. *Where was the hot spot? Evolution and dispersal of early Homo into temperate climates.*
¿Dónde estaban los puntos calientes? Evolución y dispersión inicial del género *Homo* en latitudes templadas.

11:45-13:00. Discussion.

13:00-15:30. Lunch & Siesta.

15:30-16:15. CHRONIS TZEDAKIS. *Chronologies and climate context.*

Cronologías y contexto climático.

16:15-16:45. Discussion.

16:45. Bus to Archena Thermal.

21:00. Dinner.

24th October

9:00-9:45. JIM ROSE. *The landscape, environment and climate of the earliest Humans in Northern Europe (c. 750,000 to 500,000 years ago) and the reasons for the survival of this evidence.*

Paisajes, ambientes y climas de los primeros humanos del norte de Europa (750.000 a 500.000 años antes del presente).

9:45-10:30. JOSÉ MARÍA BERMÚDEZ DE CASTRO. *The life history pattern of the genus Homo.*
Historia biológica del género *Homo*.

10:30-11:00. Coffee Break.

11:00-11:45. JOHN SPETH. *Decline of large mammals in the Levantine Late Middle Paleolithic: climatic change or overhunting?*

¿Cambio climático o presión de caza? Declive de los grandes mamíferos en el Paleolítico Medio de Oriente Próximo.

11:45-13:00. Discussion.

13:00-15:30. Lunch & Siesta.

15:30-16:15. CLIVE FINLAYSON, G. FINLAYSON, D. FA, F. GILES-PACHECO, K. BROWN.

How the obsession with cladistics and stone tool typology obstructed our understanding of the reality in human evolution.

De cómo la obsesión con la cladística y la tipología lítica han frenado el progreso en la comprensión de las pautas y procesos de evolución humana.

16:15-17:00. LARRY SAWCHUK. *The first necessity of life: an examination of health and rainfall in Gibraltar 1869 to 1899.*

Primeras necesidades: investigando la salud en relación con las pautas de pluviometría en Gibraltar entre 1869 y 1899.

17:00-18:30. Discussion.

19:30. Open Conference. CLIVE FINLAYSON.

Neanderthal man: myth and reality.

Mitos y realidades sobre el Hombre de Neandertal.

21:00. Dinner.

25th October

9:00-9:30. GEOFF BAILEY. *Coastlines and world prehistory.*

Líneas de costa y prehistoria mundial.

9:30-10:00. JOHN STEWART. *Neanderthal ecology in the light of interpretations of contemporary mammals.*

Ecología del Neandertal desde la perspectiva de la fauna de mamíferos contemporáneos.

10:00-10:30. Coffee Break.

10:30-11:15. CARLES LALUEZA-FOX. *Mitochondrial and nuclear DNA research in El Sidron neandertal site.*

Investigaciones sobre el ADN mitocondrial y nuclear en el yacimiento neandertal de El Sidrón.

11:15-12:00. Discussion.

12:00-13:30. Press conference. Rueda de prensa.

13:30-15:00. Lunch.

15:00. Bus to Cartagena.

Visita a la exposición: Recambio de grandes mamíferos en la transición Plioceno-Pleistoceno en el suroeste de Europa. Por ALFONSO ARRIBAS & GUIOMAR GARRIDO.

Excursion and Exhibition of the fossil site of Fonelas conducted by ALFONSO ARRIBAS & GUIOMAR GARRIDO: Turnover of large mammals in the Pliocene-Pleistocene transition of southwestern Europe

Visita al Teatro Romano de Cartagena. Por SEBASTIÁN RAMALLO, director de las excavaciones.

Exhibition of the Teatro Romano conducted by SEBASTIÁN RAMALLO, director of the excavations.

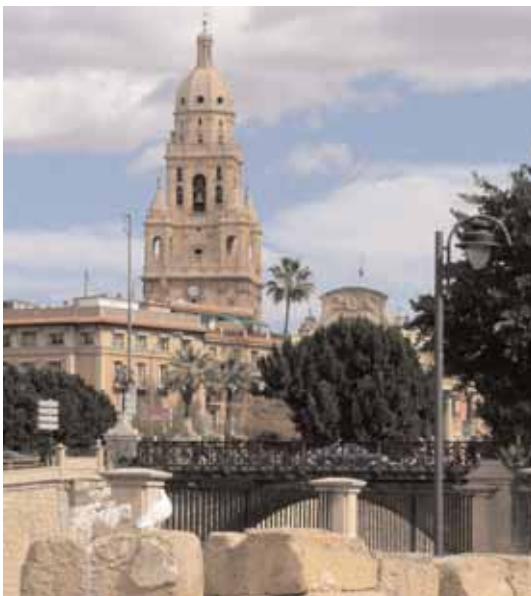
21:30. Dinner.

Tourist Information

Murcia

The history of Murcia and its condition as the capital of the Region have made possible its enormous cultural and artistic heritage that this city still keeps, all of which clearly shows its evolution through the time.

Among the numerous monuments that spot its streets, we can find the Cathedral of Santa María, one of the masterpieces of Spanish Baroque. Close to it, another icon of the religious Murcian Baroque, is the Bishop Palace. Several other religious buildings, however less important than these two, are also “leading characters” in this city: the Royal





Monastery of St. Clare, which was originally a muslim palace built in the XIII century; the church of St. Domingo, the Sanctuary “de la Fuensanta” (baroque and built in the XVIII c.), the church of

Nuestro Padre Jesús Nazareno, where the Salzillo Museum is located, and a neverending number of other churches sprinkled all over the city.

As for the civil architecture, Murcia also has several emblematic buildings like the Almudí Palace (the old city wheat warehouse), the “Casino”, with its Arab courtyard, the Palace of St. Esteban, the Romea Theatre, monumental building of eclectic style, and the Floridablanca and Seda Gardens.

ARCHENA HEALTH RESORT

The complex includes several buildings, and even though most of them were erected by the middle of the XIX c., the truth is its water was already used by every people who settled down in that territory. Many archeological discoveries prove that several ancient cultures made good use of these medicinal waters, and adapted the place according to their own necessities.

It was the Romans that used this place in a very similar way we do nowadays: we all know it was a “very Roman” tradition to attend public baths regularly. For this purpose they used these hot



springs, warmed up by the very earth, like a modern heating system, which increases enormously their curative properties. We know very little about the Visigothic, Byzantine and Arab eras

of this resort, but we can easily imagine these peoples used the springs in the same way.

Cartagena

Cartagena is a Spanish Mediterranean city and naval station in the southeast of the Iberian Peninsula in the autonomous community of Region of Murcia.

Cartagena has been the capital of the Spanish Navy's Maritime Department of the Mediterranean since the arrival of the Spanish Bourbons in the eighteenth century. As far back as the sixteenth century it was one of the most important naval





ports in Spain, together with Ferrol in the North.

It is a walled town and has a fine harbour

defended by forts. In the time of Philip II of Spain, it was a major naval seaport of Spain. It is still an important naval seaport, the main military haven of Spain, and there is a big naval shipyard. Its long history (it was founded about 230 BC by Carthaginian general Hasdrubal as *Qart Hadast*) and its being such an important strategic spot, have allowed Cartagena to keep traces from all the cultures that settled down by the Mediterranean Sea. One of them, the Roman, made Cartagena a splendid city with its own theatre, one of the largest in Spain, whose remains we can see today. Close to it we can find the ruins of the old Cathedral of St. María, one of the most important buildings in the city. The mystic monastery San Ginés de la Jara, another religious construction, is worth visiting.

During the last decades of the XIX c. and the beginning of the XX c. Cartagena enjoyed another “golden era”, due to its mining industry. It was at

that time that important civil buildings in modernist style were erected: the Gran Hotel, la Casa Llagostera, the Aguirre Palace and the “Casino”.



Murcia

La historia de la ciudad de Murcia y su condición de capital de la Región han hecho posible que sean una gran multitud y de una marcada importancia los elementos patrimoniales que atesora y que reflejan su evolución en el devenir de los tiempos.

Entre los numerosos monumentos que salpican sus calles se eleva la Catedral de Santa María, pieza clave del barroco español. Junto a ella, otro emblema del barroco religioso murciano: el Palacio Episcopal. Son varios los edificios religiosos que comparten protagonismo con los anteriores, los más importantes de la ciudad.

Entre ellos está el Real Monasterio de Santa Clara, erigido sobre las ruinas de un palacio musulmán del siglo XIII, la iglesia de Santo Domingo, el Santuario de la Fuensanta, pieza barroca del siglo XVIII, la iglesia de Nuestro Padre Jesús Nazareno, donde está ubicado el Museo Salzillo, y un sinfín de otras tantas iglesias se encuentran esparcidas por todos los rincones del municipio.

Respecto a la arquitectura de carácter civil, Murcia posee igualmente elementos emblemáticos de la propia localidad y de la totalidad de la Región, como el Palacio Almodí, antiguo



pósito municipal de trigo, el Casino, en el que destaca la decoración neozarita del Patio Árabe, el Palacio de San Esteban, sede de uno de los primeros colegios jesuitas de España, el Teatro Romea, monumental edificio de estilo ecléctico, o los jardines de Floridablanca y de la Seda.

LOS BAÑOS DE ARCHENA

Son varios los edificios que componen el conjunto termal, casi todos ellos realizados a mitad del siglo XIX, si bien sus aguas estuvieron siendo utilizadas por cada una de las culturas que en el territorio se asentaron.

Numerosos descubrimientos arqueológicos demuestran que culturas antiguas también aprovecharon sus aguas medicinales y que adaptaron el entorno a las necesidades de cada época.

Los romanos fueron los que le darían, debido a su cultura, unos usos parecidos a los actuales, al estar en ellos fuertemente arraigada la costumbre del baño público, algo para lo que se sirvieron de unos manantiales naturales en los que la tierra sirve como calefactor del agua, incrementando exponencialmente las propiedades curativas de ésta. Poco se sabe de la etapa visigoda y bizantina del balneario, tampoco de la árabe, aunque nos podemos imaginar que aprovecharían estas aguas de similar forma.

Cartagena

La ciudad portuaria de Cartagena posee un vasto y riquísimo patrimonio artístico.

Su larga historia y su importancia como zona estratégica costera le han permitido conservar vestigios de todas las culturas que pasaron por estas tierras mediterráneas.

De su esplendoroso pasado romano da buena fe el yacimiento del teatro, uno de los mayores de este tipo en toda España. Sobre él se emplazan las ruinas de la antigua Catedral de Santa María, uno de los edificios religiosos más importantes de la ciudad. También destaca como construcción religiosa el mítico monasterio de San Ginés de la Jara.

Su tradicional carácter castrense, reforzado tras la decisión borbónica de establecer allí el arsenal, supuso la construcción de numerosos elementos militares de carácter defensivo, tales como castillos, fuertes y baterías. En este sentido también sobresale el monumento al aire libre del submarino de Isaac Peral.

Otra edad de oro para Cartagena fue la proporcionada por el auge de la minería durante las últimas décadas del siglo XIX y primeras del XX, que dejó para el embellecimiento de la ciudad importantes construcciones civiles de estilo modernista como el Gran Hotel, la Casa Llagostera, el Palacio Aguirre o el Casino.



Región de Murcia
Consejería de Educación,
Ciencia e Investigación