

Program

Paleoanthropology Society  
April 19, 20 1994 Anaheim  
Disneyland Hotel

Tuesday, April 19: 9:00 - 12:40

9:00-9:15 Introduction

- 9:15 Kramer, Andrew (Tennessee) Craniometric variation in extant large-bodied hominoids: testing single-species hypotheses in fossil hominid samples.  
9:35 Prost, Jack (Illinois-Chicago) Evolution of the hominid cranium.  
9:55 Robb, John (Michigan) Issues in the skeletal interpretation of muscle attachments.

10:15 -10:35 DISCUSSION

(10:35-11:00 Coffee Break)

- 11:00 White, Tim (California-Berkeley) Middle Awash Palaeoanthropology in the 1990's: results and prospects.  
11:20 Monahan, Christopher (Wisconsin) New taphonomic data from Bed II, Olduvai Gorge, and their relevance to early hominid subsistence behavior.  
11:40 Milo, Richard (Chicago) Bone damage and bone collectors at Elandsfontein, Cape Province, South Africa: preliminary results of a microscopic study.  
12:00 McBrearty, Sally (Brandeis), Laura Bishop (Yale) and John Kingston (Yale), Barbara Brown (Yale) and Steven Ward (Northeastern Ohio) Environmental settings for hominids KNM-BK 67 and KNM-BK 8518 from the Kapthurin Formation, Baringo, Kenya.  
12:20 - 12:40 DISCUSSION

Tuesday, April 19: 2:20 - 5:40

- 2:20 Roebroeks, Will (Leiden) The earliest occupation of Europe: a reappraisal of chronological and artefactual evidence.  
2:40 Protsch, Reiner (Goethe - Frankfurt) New research results on Homo erectus heidelbergensis and its position as the earliest fossil hominid in Europe.

3:00 Stiner, Mary (Loyola) Prime-dominant ungulate mortality patterns and the evolution of the human predatory niche.

3:20 Gargett, Robert (California-Berkeley) My, what big eyes you have.

3:40 - 4:00 DISCUSSION

4:00 Conrad, Nicholas (Connecticut) Middle Paleolithic economies in the Rhine Valley.

4:20 Miracle, Preston () Rhino procurement by Krapina Neanderthals.

4:40 Hublin, J. (CNRS) The Zafarraya Mousterian site: new evidence on the contemporaneity of modern humans and Neanderthals in South-western Europe.

5:00 Solecki, Ralph and Rose Solecki (Texas A&M) The Mousterian industries from Yabroud Shelter I (Syria). A new interpretation .

5:20 - 5:40 DISCUSSION

Wednesday, April 20: 9:00 - 12:40

9:00 Ikawa-Smith, Fumiko (McGill) the Palaeolithic of East Asia and evolution and dispersal of ancient and modern humans.

9:20 Ambrose, Stanley (Illinois-Urbana) Technological change volcanic winter, and genetic evidence for the spread of modern humans from Africa.

9:40 Marean, Curtis (Stony Brook) Late quaternary faunal exploitation at Lukenya Hill, Kenya

10:00 Rigaud, J. -P. (Bordeaux) and Jan Simek (Tennessee) Preliminary report on excavations at the Grotte XVI (Dordogne, France): aspects of Middle and Upper Paleolithic settlement.

10:20 - 10:40 DISCUSSION

(10:40 - 11:00 Coffee Break)

11:00 Knecht, H. (Miami) The use of bone and antler as raw materials during the Early Upper Paleolithic.

11:20 Backer, A. () Experimental studies of microdebitage and retouch flakes.

- 11:40 Straus, L. (New Mexico) M. Otte (Liege), A. Gautler (Gent), and P. Haesaerts (IRSN de Belgique) The first 10,000 years: new light on the Early Paleolithic in Belgium.
- 12:00 Bisson, M. (McGill) and R. White (NYU) Rediscovered female figurines from the Grimaldi Caves, Italy.

12:20- 12:40 DISCUSSION

Wednesday, April 20: 2:40 - 5:00

- 2:40 Dibble, H. (Pennsylvania) and D. Olszewski (Arizona) The Zagros Aurignacian: a new look at the early Baradostian assemblage from Warwasi Rockshelter, Iran.
- 3:00 Goebel, T. (Alaska-Fairbanks) Defining the Early Upper Paleolithic of Inner Asia.
- 3 :20 Madsen, D. ( ), R. Elston ( ), R. Bettinger ( ), Xu Cheng ( ) and Z. Kan ( ) Late Paleolithic - Early Neolithic settlement assemblage changes in North Central China.
- 3:40 James, S. (Arizona State) Problems with pre-Clovis human occupations at Pedra Furada, Orogrande, and Pendejo: fact or fantasy?

4: 00 - 4: 20 DISCUSSION

4:20 - 5:00 Business meeting

ABSTRACTS  
PALAEOANTHROPOLOGY SOCIETY  
Anaheim California, April 19-20, 1994

Stanley H. Ambrose ( University of Illinois) Technological Change, Volcanic Winter, and Genetic Evidence for the Spread of Modern Humans from Africa

Abstract: Mitochondrial DNA data presented by Harpending et al. (Current Anthropology 1993) suggest that modern human populations originated in Africa and spread to the rest of the Old World approximately 50 000 + 20 000 years ago. This date represents the time of release from a severe population bottleneck that is well documented by previous genetic studies. Their proposed mechanism for the growth and spread of African populations is the invention of the more efficient Later Stone Age/Upper Paleolithic technology which increased human adaptability and carrying capacity. Northern and southern Africa were sparsely occupied or abandoned during the last glacial period. Klein thus suggested modern African human adaptations originated in East Africa because this region would have been a refugium. Archaeological evidence from the Kenya Rift Valley is consistent with this scenario. At Enkapune ya Muto Rockshelter the transition to the Later Stone Age began prior to 50 000 bp. The evidence for the dating of this transition will be described in this paper.

Climate change provides an alternative explanation for the release from the bottleneck. The beginning of the last glacial period (Oxygen Isotope Stage 4) began approximately 75 000 bp. Its onset was apparently accelerated and severity amplified by the eruption of Toba in Sumatra at 73 500 bp (Rampino & Self 1992 Nature 359:50). Toba was the largest eruption of the last 450 million years. The resultant volcanic winter was followed by several years with northern hemisphere surface temperatures 3-5°C cooler than average. This could have decimated human populations outside of tropical refugia. The release from the population bottleneck would have occurred at the transition to Oxygen Isotope Stage 3 at ~ 60 000 bp. This release should have occurred most quickly in the largest tropical refugium and thus in equatorial Africa.

Anna M. Backer ( ) Experimental Studies of Microdebitage and Retouch Flakes

**Abstract:** Although important strides have recently been made in microartifact research, retouch flakes and the tiny chips and spalls that result from stone working are frequently ignored in technological studies of Paleolithic assemblages. Actualistic and comparative analysis of microdebris produced in different situations can contribute in a significant way to understanding behavioral contexts in this remote past. This paper presents an experimental methodology specifically designed to integrate studies of Paleolithic microartifacts with studies of the stone tools found with them. I offer some thoughts on the subject that arose from preliminary, empirical perusal of microartifacts from one of the Castelperronian levels at La Grande Roche de la Plematrie, Quincay (Vienne, France).

Michael S. Bisson (McGill University) and Randall White (New York University) Rediscovered Female Figurines from the Grimaldi Caves, Italy.

**Abstract:** This paper provides the first description of four Gravettian female figurines and a pendant from the Grimaldi Caves, Italy, that were rediscovered in an antique shop in Montreal. The specimens were part of a group of c. 15 figurines collected sometime between 1883 and 1889 by Louis Jullien a professional antiquities dealer. The majority of the collection was sold to the Musée des Antiquités Nationales, France, but this group was retained by the Jullien family and have remained unavailable for scientific scrutiny for over a century. The collection includes two ivory "Venus" figurines similar in style to those from France and Eastern Europe, and three steatite specimens that are unusual in form. One is a flattened, probably female, figure pierced at the neck. Another is a double figurine with a typical female form aligned back to back with an unidentified animal, possibly a small carnivore. The final piece is a pendant or button with the features of a "fantastic animal". Issues surrounding the provenience and authenticity of these specimens are discussed, as are the implications of the mixed styles of these figurines to the identification of Upper Paleolithic information exchange patterns in Europe.

Nicholas J. Conard (Univ. of Connecticut) Middle Paleolithic Economies in the Rhine Valley.

**Abstract:** Recent excavations at the localities of Metternich, Tonchesber and Wallertheim provide an excellent opportunity to reconstruct Middle Paleolithic economies. These localities have the most complete geological

sections from the last two glacial cycles in the Middle Rhine and provide ideal settings for high resolution chronostratigraphic studies. The low energy fluvial and loessic sediments often preserve lithic and faunal assemblages in largely undisturbed contexts. Over a dozen find horizons from these three sites have been excavated in the last decade. Nearly all of the find horizons are well dated, and their paleoenvironmental and paleogeographic settings are well-understood. This paper will present an overview of the data on lithic and faunal assemblages from these sites. These data demonstrate that Neanderthals practiced a wide range of economic strategies in this region during the last two glacial cycles.

H. Dibble (Pennsylvania) and D. Olszewski (Arizona)  
The Zagros Aurignacian: a new look at the early Baradostian assemblage from Warwasi Rockshelter, Iran.

**Abstract:** We have found what we believe to be a Zagros facies of the Aurignacian. This has implications for the development of the Aurignacian from the underlying Mousterian at Warwasi, as well as potential impact on the spread of Aurignacian industries into the Levant and Europe.

ROBERT H. GARGETT (University of California at Berkeley) My, what big eyes you have!

**Abstract:** Taphonomic and spatial analysis of the cave bear (*Ursus spelaeus*) fauna from Podhradem cave, Czech Republic, reveals non-random spatial patterns attributable to cave bears preparing hibernating places, and to repeated visits by wolves and hyenas seeking food. These results demonstrate that other large mammals besides hominids are capable of leaving behaviorally meaningful, spatially patterned material traces in caves. There are two related implications of this study for research into modern human origins. First, to avoid anthropomorphizing spatial patterns discovered in hominid sites, analyses should take into account the propensity for non-cultural animals to segment space and disturb the material in a cave according to behavioral proclivities and physical constraints. Second, it may be worthwhile re-examining the perception that spatial patterns in material associated with archaic members of the genus *Homo* are necessarily the result of culturally-mediated behavior.

Ted Goebel (University of Alaska) Defining the Early Upper Paleolithic of Inner Asia

**Abstract:** In south Siberia, new field results indicate that the Middle-to-Upper-Paleolithic transition occurred prior to 40,000 years ago (yr BP). Basal Upper Paleolithic occupations at Kara-Bom in the southwest Siberian Altai have been accelerator radiocarbon dated to at least 43,000 yr BP, and at Makarovo-4 and Varvarina Gora in the Lake Baikal region, southeast Siberia, new accelerator dates on early Upper Paleolithic occupations indicate ages of >39,000 and >36,000 yr BP, respectively. Siberian initial Upper Paleolithic industries are characterized by primary reduction technologies based on the detachment of blades from "flat-faced," parallel blade cores, a variety of secondary reduction technologies (including bifacial, burin, and backing retouch), and tool kits with end scrapers, burins, graters, wedges, bifaces, and unifacially retouched points on blades. Levallois technologies are absent, and Mousterian tool forms such as denticulates and side scrapers are infrequent. Bone, antler, and ivory implements appear for the first time, as do items of personal adornment, possible mobiliary art, and large open sites with substantial hearths, possible storage pits, and structures. Similar early Upper Paleolithic industries have been identified in the Russian Far East (Almazinka), North China (Shuidonggou), central Mongolia (Orkhon), Kazakhstan (Valikhanova), Uzbekistan (Obi-Rakhmat), and Afghanistan (Kara-Kamar). Some of these sites are dated; together with at least ten sites in Siberia they demonstrate that the emergence of Upper Paleolithic technologies in inner Asia was a widespread event that occurred sometime prior to 40,000 yr BP. The origins of this inner Asian early Upper Paleolithic technocomplex are unknown; nowhere in the area is there unequivocal evidence for a transitional Middle-Upper Paleolithic industry. Affinities, however, can be drawn with Baradostian industries in northern Iran-Iraq, which also appear to predate 40,000 yr BP, and with transitional Upper Paleolithic industries in the Levant (Ksar-Akil levels 2321, Kebara Cave unit IV), which may have emerged as early as 50,000-45,000 yr BP.

J.J., Hublin (Musée de l'Homme) The Zafarraya Mousterian Site New Evidence on the Contemporaneity of Modern Humans and Neanderthals in South-Western Europe

**Abstract:** The Zafarraya cave is located north-east of the province of Malaga (Spain). It opens at 36,000 ft. above sea level in a mountainous environment. The site, excavated in 1980-83 and since 1990, appears to have been alternately occupied by carnivores and humans at the end of the middle

Paleolithic. The archeological deposits yielded typical Mousterian assemblage with Levallois debitage. The lithic industry was transported into the cave already manufactured with virtually no local debitage. More than 90% of the faunal remains are ibex, which seem to represent a main source of subsistence for the hominids. Human remains were discovered of at least three distinct individuals. The most complete specimen is an exceptionally well preserved mandible. In spite of its moderate dimensions, this fossil displays derived features clearly allocating it to the Neandertals. C-14 dates provided by this Mousterian series range from 29.8+/-0.6ky to 31.8+/- 0.55ky and U/Th dates range from 28.9+/- 4.2ky to 31.7+/- 3.6ky. Together with the regional archaeological evidence and other dates in Portugal, these data indicate a very long persistence of Neandertals associated with Mousterian Industries in the south of the Iberic Peninsula. The increasing chronological overlap between the (presumably modern) early Aurignacian peopling and the latest Neandertals in western Europe provoke new questions on the taxonomic status of Neandertals, as well as new perspectives on the complex and variant cultural interactions between the two groups.

The Zafarraya project is funded by the French Ministry of Foreign Affairs (Paris), the CNRS (Paris), the College de France (Paris), the Junta de Andalucia (Sevilla), the Diputacion Provincia de Malaga, and the Leakey Foundation.

Fumiko Ikeya - Smith (McGill University) The Palaeolithic of East Asia and Evolution and Dispersal of Ancient and Modern Humans.

**Abstract:** It has long been noted that the Palaeolithic remains from East Asia were different from those found in Europe, Africa and Western Asia. Although the presence in this region of assemblages that are generally similar to the Upper Palaeolithic of western Eurasia is now well-established, it remains true that the earlier segments of the Palaeolithic era are characterized by the preponderance of amorphous flake tools and by the virtual absence of the typical handaxe and the Levallois method of flake production. These characteristics will be discussed with reference to the current debate over the origin and dispersal of Genus Homo and the anatomically modern humans.

Steven R. James (Arizona State University) Problems with Pre-Clovis Human Occupations at Pedra Furada, Orogrande, and Pendejo: Fact or Fantasy?

Verification and replication of observational phenomena represent major fundamental considerations in sound scientific research. While many paleoanthropologists have recently pursued taphonomic and other actualistic studies within a scientific frame of reference as a means for differentiating between prehistoric hominid behavior and natural processes, some researchers have continued to ignore these data. This is particularly the case with Pre-Clovis investigations in the Americas, for associations of supposed fire hearths and crude "stone tools" at Pedra Furada (Brazil) and burned bones of extinct fauna and crude "stone tools" at Orogrande and Pendejo rockshelters (New Mexico, USA) have been attributed to early human behavior (prior to 13,000 y.a.). As I have argued elsewhere with regard to early hominid use of fire in the Old World, the same principles of natural burning in caves and rockshelter deposits could well account for the so-called hearths and burned bones in Pre-Clovis sites. These natural processes and other taphonomic considerations including megafaunal bioturbation are examined as alternative mechanisms that mimic features attributed to humans.

Heidi Knecht (University of Miami) The Use of Bone and Antler as Raw Materials During the Early Upper Paleolithic.

Abstract: The initiation of bone and antler working has long been heralded as a hallmark of the Middle to Upper Paleolithic transition. In discussions of the early technology of organic media, bone and antler are rarely discussed as individual materials. Yet the structural characteristics and mechanical properties of these two materials are quite distinct. From the beginning of the Upper Paleolithic, bone and antler each were worked via techniques suitable to their own characteristic properties. Moreover, objects made from bone were used to perform different sorts of tasks than objects made from antler. This paper will compare, first, the material properties of bone and antler, second, the Early Upper Paleolithic techniques which were used to work these two, very different, organic media, and, third, the uses for which objects made from the two media were employed.

Andrew Kramer (University of Tennessee). Craniometric variation in extant large-bodied hominoids: testing single-species hypotheses in fossil hominid samples.

Abstract: Forty-six cranial, facial and gnathic measurements were collected

on samples of Pan troglodytes (N = 64), Gorilla gorilla (N = 65) and Pongo pygmaeus (N = 29). Twenty-five of these metric variables are homologous to measurements taken by W.W. Howells (for modern Homo sapiens) and B.A. Wood (for the Koobi Fora fossil hominid crania). These three sets of data are integrated into a single database that is used to model large-bodied hominoid intra- and inter-specific variability, and further, to test single-species hypotheses among fossil hominids. To this end the proposal that two species of early Homo are represented in the Plio-Pleistocene of East Africa (H. habilis, e.g. KNM-ER 1813 and H. rudolfensis, e.g. KNM-ER 1470) is investigated. Because the fossil samples are small and of uncertain gender composition, non-parametric randomization is applied to univariate (coefficient of variation) and multivariate (determinant) analytical procedures in order to discern the nature of variation among the earliest members of genus Homo.

Sally McBrearty (Brandies), Laura Bishop (Yale), John Kingston (Yale), Barbara Brown (Yale), and Steven Ward (Northeastern Ohio): Environmental setting for hominids KNM-BK 67 and KNM-BK 8518 from the Kapthurin Formation, Baringo Kenya.

Abstract: The Kapthurin Formation is a fossiliferous sequence of fluvial, lacustrine, and volcanic rocks, dating from c. 700 Ka to < 200 Ka and exposed in the Rift Valley west of Lake Baringo. Previous workers have reported two hominid mandibles (KNM-BK 67 & KNM-BK 8518) and associated postcrania from fluvial sediments in the middle part of the formation. The mandibles have been attributed to Homo erectus. Our 1993 reconnaissance in the Kapthurin Formation has expanded the faunal sample from the hominid level to include both cercopithecine and colobine monkeys, an array of rodents ranging from the cane rat to a large porcupine (Hystnx or Xenohystnx), and carnivores including felids and viverrids. Suids and bovids from the formation are diverse; elephants and hippos are numerous. Both open and locally swampy conditions are indicated. To the east, lacustrine sediments contain an aquatic fauna, including crocodile, hippo and catfish. Our survey has located 30 new archaeological and paleontological sites in the Kapthurin Formation. Artifacts represent at least three archaeological industries, but associations with the hominids are problematic. Aims of future work include clarifying the stratigraphic relationships of the hominid bearing sediments with archaeological sites and reconstructing ancient Kapthurin topography and vegetation.

David B. Madsen, Robert G. Elston, Robert Bettinger, Xu Cheng and Zhong Kan Late Paleolithic - Early Neolithic Settlement Assemblage Changes in North Central China

Abstract: Survey in the Alashan desert and Helan Mountains of Ningxia Hui Autonomous Region and Nei Mongol discloses variability in the distribution and assemblage composition among forty-seven archaeological localities, probably indicating reduction in hunter-gatherer residential mobility through time. Late Paleolithic tool assemblages are less frequent, smaller, and relatively uniform from site to site, tending to be found near canyon mouths on the mountain front, or around springs in the middle to upper reaches of fans, suggesting limited variation in both length of stay and subsistence focus. In contrast, Early Neolithic sites are more abundant, located near fan toes or lower fan springs where water could be more easily diverted. Early Neolithic assemblages are more variable in size and complexity; larger, more diverse assemblages suggest long-term residential bases, while smaller specialized assemblages, devoid of microliths, indicate short-term camps and resource processing locations. This pattern helps confirm a similar pattern identified in materials collected by the Sino-Swedish expedition (Bettinger et al 1994) in the northern Alashan, and suggests that together the trend towards decreased residential mobility is associated with increasingly intensive and specialized use of seed resources that may be related to the early development of plant husbandry.

Curtis W. Marean (SUNY Stony Brook) Late Quaternary Faunal Exploitation at Lukenya Hill, Kenya.

Abstract: Lukenya Hill is a granitic inselberg in the savanna of the Athi-Kapiti Plains in southcentral Kenya. There are numerous rockshelter and open-air archaeological sites at Lukenya Hill. Excavations at many of these sites show that Lukenya Hill was a focus of prehistoric settlement at least from MSA times up to the present. This paper reports on the faunal remains from four of these sites numbered GvJm19, GvJm22, GvJm46, and GvJm62. The sediments at these sites preserve faunal remains that sample the MSA, the early LSA, and Holocene LSA occupations of both hunter-gatherers and pastoralists. GvJm22, a rockshelter, and GvJm46, an open-air site, have large faunal assemblages that are the focus of this report. The open-air site of GvJm46 has both early LSA and MSA faunal occupations. One species of

extinct alcelaphine antelope dominates both the LSA (~55% of total MNI) and MSA (~75% of total MNI) occupations at GvJm46, while the same alcelaphine is only a moderate component of the rockshelter occupations of similar age at GvJm22. The mortality profiles of the small alcelaphine are dominated by prime-age adults at both GvJm22 and GvJm46, while the skeletal element representation at GvJm46 is more even than at GvJm22. The species representation, mortality profiles, skeletal element representation, and bone modification suggest that GvJm46 was a specialized hunting locality where large numbers of the extinct alcelaphine were killed *en masse* during both MSA and LSA times. These data suggest a level of tactical land-use and planning typically not associated with the MSA in Africa. However, there remains no evidence of a species-specific hunting adaptation in Africa of the type well documented in the Great Plains of the United States, despite the presence of large mammal migrations that could support such an adaptation.

Richard G Milo (The University of Chicago) Bone Damage and Bone Collectors at Elandsfontein, Cape Province, South Africa: Preliminary Results of a Microscopic Study.

Abstract: The Middle Pleistocene site of Elandsfontein, in the western Cape Province of South Africa, has yielded the remains of numerous large mammals, including diverse bovids and non-human carnivores. In addition, stone tools and the Saldanha calvarium testifying to the presence of hominids on at least an episodic basis. To date, however, there has been no direct evidence for human involvement with other animals. Based on preliminary analysis of a microscopic examination of over 1500 large-medium and large bovid limb bones, I demonstrate that hominids were utilizing animal products at Elandsfontein, albeit at a low level of intensity compared to non-human predators and scavengers. I suggest that hominids were removing most of the animal products they obtained to another location for consumption. Furthermore, in the light of an exhaustive microscopic examination of the bovid assemblage from Klasies River Mouth Cave 1, there is reason to speculate that Middle Pleistocene hominids at Elandsfontein were considerably less effective at obtaining animal products than were their successors in the early Late Pleistocene.

Preston Miracle (University of Michigan) Rhino Procurement by Krapina Neandertals.

**Abstract:** Large mammal procurement has figured largely in models of Middle Paleolithic subsistence strategies. Proposed strategies range from opportunistic and unplanned scavenging, to organized cliff-jumps. The Krapina faunal assemblages, due to their wealth of rhino remains, provide a valuable window on the role of megafauna in a Neandertal subsistence strategy. New data on the stratigraphy and taphonomy of the Krapina fauna will be presented, and particular attention will be paid to the procurement and consumption of rhinos at the site.

Jack H. Prost (University of Illinois at Chicago) Evolution of the Hominid Cranium.

**Abstract:** Physical anthropologists have confused the interpretation of hominid evolution by using inadequate measures to analyze the bone morphology of the fossils. Two demonstrations, one mathematical and one biological, prove that scalars are inadequate measures for the comparison of three-dimensional form. Vectors correct the inadequacy of scalars. When vectors are applied to a sample of hominoid crania, they identify the changes that occurred in the prehominoïd and hominid lineage over the last three million years. No long term trends were found in dental proportions and, accordingly, the shape of the face carried very little information about phylogenetic status. The brain case varied with size of functional brain areas and showed trends for the development of specific motor and sensory processing capacities, capacities mirrored in the artifactual record. Brain development occurred in four successive stages: 1) expansion of motor-somatosensory areas in the cerebellar and cerebral hemispheres, specifically areas devoted to the upper limbs and, perhaps, face; 2) expansion of visual areas in the occipital and inferior temporal lobes; 3) expansion of auditory areas in the temporal lobes and language areas in the frontal lobes; 4) simultaneous expansion of paraoccipital areas in the parietal lobes, expansion of prefrontal areas in the frontal lobes, and contraction of visual areas in the inferior temporal lobes.

Rigaud, Jean-Philippe (University of Bordeaux) and Simek, Jan (University of Tennessee) Preliminary Report on Excavations at the Grotte XVI (Dordogne, France): Aspects of Middle and Upper Paleolithic Settlement.

**Abstract:** Since 1984, the deeply-stratified cave site Grotte XVI has yielded a long sequence of archaeological levels spanning the Middle Paleolithic

(Mousterian) and Upper Paleolithic (Chatelperronian, Aurignacian, Gravettian, Solutrean, and Magdalenian) periods. This sequence and the materials contained within the archaeological layers are described. A complete series of radiometric dates are reported. Detailed research using a variety of techniques into site formation processes is discussed. Preliminary analysis of prehistoric cave use are also presented, and similarities and differences among stratigraphic levels are discussed in reference to wider patterns of Paleolithic settlement in the region. Grotte XVI provides a new and important set of data for understanding both the paleolithic archaeological record for southern French cave sites, and processes of cultural and economic change over a large span of paleolithic time.

John Robb (University of Michigan) Issues in the skeletal interpretation of muscle attachments.

**Abstract:** Muscle attachments have rarely been utilized systematically as clues to activity, primarily because of methodological difficulties. This paper presents formal morphological standards for coding muscle attachments at a number of important skeletal sites, along with interpretations of the results obtained. The primary conclusions are: (1) average skeletal development of all muscle sites in a skeleton is tied primarily to the individual's age; (2) deviations from the norm within and between skeletons may be linked to activities performed; (3) even when specific activities cannot be deduced, statistical patterns within a group may be informative about its way of life and social organization of activities. Examples are drawn from a range of prehistoric and historical samples, and the logical and practical requirements for reliable interpretation are discussed.

Wil Roebroeks (University of Leiden) Earliest Occupation of Europe: A Reappraisal of Chronological and Artefactual Evidence.

**Abstract:** Critical analysis of the chronological evidence for the earliest occupation of Europe has very recently yielded a short-chronology scenario that suggests that the earliest occupation of Europe took place at a much later date than is commonly acknowledged. The paper will present some of the arguments for this scenario and some of its implications.

Ralph Solecki and Rose Solecki (Texas A&M) The Mousterian Industries from Yabroud Shelter I (Syria). A New Interpretation.

Abstract: The Mousterian lithic industries from the upper part of Yabroud Shelter I as presented by A. Rust, the original excavator, are unique in Near Eastern prehistory. No clear cut evolution or connections of the industries could be found in Rust's sequence. Within the 2 m depth, the cultural horizons show such a diversity that one could reasonably assume replacement of occupations bearing wholly different lithic technologies. Reviewing our Columbia University excavation data coupled with more recent fresh investigations makes us confident that natural, i.e., periglacial conditions, at Yabroud were responsible in part for the aberrant features in the Mousterian at Yabroud.

Mary C. Stiner, Ph.D. (Loyola University of Chicago) Prime-dominant ungulate mortality patterns and the evolution of the human predatory niche.

Abstract: Comparisons of the age structures of prey death assemblages show that humans manifest a general tendency to harvest prime adult ungulates. This pattern is found in a wide variety of Paleolithic, Holocene, and modern cases, and the tendency distinguishes humans from all nonhuman predators with which they coexist. Although preferential harvesting of prime adult ungulates represents a potentially viable predator-prey relationship, it has an unique demographic impact on prey populations by reducing the mean age of reproduction. The appearance of this tendency in prehistory is therefore important for understanding the evolution of the human predatory niche and hunting specialization. Prime-adult harvesting, especially of ungulate species in the medium-body-size range, emerged as a common practice sometime during the Upper Pleistocene and became an important component of many human subsistence systems thereafter.

L G Straus (University of New Mexico), M Otte (Universite de Liege) A Gautier (Universiteit Gent) & P Haesaerts (Institut Royal des Sciences Naturelles de Belgique) The First 10,000 Years: New Light on the Early Upper Paleolithic In Belgium.

Abstract: The limestone caves and loess-covered plateaux of Wallonia were among the cradles of paleoanthropology over 160 years ago. Once thought played out, the sites of southern Belgium are once again yielding evidence on the transition from the Middle to the Upper Paleolithic and on the reoccupation of the northern European frontier after the Last Glacial

Maximum. This paper will discuss the results of recent excavations of Aurignacian cave deposits at le Trou Magrite (34- ~ 7 kya) and of the open-air Gravettian horizon at Huccorgne (26- ~ 4 kya ~), especially in comparison to other sites in the region such as le Trou Walou and Maisieres-Canal. Following presentation of chronostratigraphic and paleoenvironmental evidence we explore significant differences in (local vs non-local) lithic raw material procurement and in knapping stages between the cave site and the open-air site and between the early and late Aurignacian occupations at le Trou Magrite, despite typological similarities between the two assemblages. A review of the new faunal data points to human residential use of sheltered Trou Magrite in winter, with possible occasional visits at other seasons. Hunting focused on reindeer and horse, with secondary exploitation of ibex. In contrast, with its strategic but exposed location and extraordinary on-site flint, Huccorgne seems to have been a camp for the procurement of horse and mammoth during the last period of climatic conditions humid enough (albeit cold) to support adequate vegetation (and hence game) before the Glacial Maximum and human abandonment of the territory presently known as Belgium.

Tim White (University of California, Berkeley) Middle Awash Paleanthropology In the 1990's: Results and Prospects.

Abstract: The Middle Awash study area in the Afar depression of Ethiopia has been the renewed focus of paleoanthropological investigation since the 1990 resumption of research in Ethiopia. The present research is directed toward extending and refining knowledge of the area subsequent to its discovery by Taieb and exploration by the RVRME. Our primary geological task has been to establish a sound stratigraphic and geochronological framework for the paleontological and archaeological discoveries made in the Middle Awash. The area's tectonic setting has made this task difficult, but tephrostratigraphy, Ar/Ar dating, and biochronological research have anchored key sections, and paleomagnetic investigations promise to refine temporal placement.

To date, 27 hominid fossils have been recovered by the research team. Hominid-bearing areas east of the modern Awash River include Belohdelie (c. 2.8 myr), Maka (c. 3.4 myr), Matabaietu and Gamedah (c. 2.5 myr) and Bodo (c. 0.6 myr). Hominid-bearing areas on the west side of the study area include Aramis (c. 4-5 myr) and Bouri (c. 1 myr). The typical Acheulean



occurrences at Bodo, Dawaitoli, and Hargufia have been placed in chronostratigraphic and lithostratigraphic contexts, and developed Oldowan occurrences are also present in these beds. West of the river, at Bouri, the documentation and interpretation of early Acheulean assemblages is underway. New discoveries of rich Middle Stone Age occurrences at Aduma, near the northeastern foot of Dulu Ali, promise to provide insight into the Late Pleistocene hominid adaptations in this part of Africa. The Middle Awash will not provide a continuous record of biological, technological, and geological evolution because of the discontinuous nature of the sedimentary deposition there. The great importance of the study area lies in its potential to brightly illuminate a series of key windows on the past six million years.

R. Protsch V. Zieten (Johann Wolfgang Goethe-Universität) New Research Results on Homo erectus heidelbergensis and its position as the earliest fossil hominid in Europe.

Abstract: A new reconstruction and new palaeopathological and morphological observations on the original Mauer mandible have been made. The incisors and several other teeth were originally wrongly positioned. New casts (previously made in 1908 and 1963), CT's, X-rays, and dating exist. Research at Reilingen near Heidelberg have also yielded a new Homo erectus (sp.).