



**Hugo Obermaier-Gesellschaft
für Erforschung des Eiszeitalters und der Steinzeit
e.V.**

45th ANNUAL CONGRESS

ON THE OCCASION OF THE CENTENARY OF

El Castillo (1903 – 2003)

IN COOPERATION WITH THE

Group of Prehistory of the University of Cantabria



22.04.2003 – 26.04.2003

IN

SANTANDER



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Conference informations

Conference venue

Escuela Superior de la Marina Civil
 Universidad de Cantabria
 Gamazo 1
 E-39004 SANTANDER
 (0034) 942 20 13 11

Presentations

Introductory lectures to the sections: 30 minutes – short papers: 20 minutes. Projection: 2 slide projectors, transparencies - overhead projector, power point.

Poster presentations

The posters should have the standard measures of 950 x 1500 mm. Languages should be English and French. The posters will be pinned on wooden boards.

See <http://www.fltq.unican.es/plano/planogeneral.htm> for the location of Conference venue and hotels

List of hotels

Hotel Chiqui

Avda García Lago, 9
 39003 Santander
 +34 942 282 700
 +34 942 273 032
hotelchiqui@hotelchiqui.com

Hotel Rhin

Avda Reina Victoria 153-155
 39005 Santander
 +34 942 274 300
 +34 942 278 653

Hotel Suite Palacio del Mar

Avda. Cantabria, 5
 39012 Santander
 +34 942 392 400
 +34 942 392 220

Hotel Santemar

C/ Joaquín Costa, 28
 39005 Santander
 +34 942 272 900
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Hotel Las Brisas

Avda. Castañeda, 17
 39005 Santander
 +34 942 281 140
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C/ La Braña, 14
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HN Ciudad de Santander

C/Menéndez Pelayo, 13-15
 39005 Santander
 +34 942 227 965
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nhciudaddesantander@nh-hotels.com

In case of arrival later than 20.00 hours the hotel must be informed in advance.

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Program of the
45th Annual Congress of the
Hugo Obermaier Society

Santander 22. – 26. April 2003

in cooperation with the
Group of Prehistory of the University of Cantabria

TUESDAY, 22.04.2003

10.00 – 10.45 h: Opening of the congress

Welcome addresses by

Prof. Dr. Pablo **ARIAS CABAL**, Group of Prehistory of the Universidad de Cantabria

Exmo. y Magnífico Sr. D. Federico **Gutiérrez-Solana**, Rector of the Universidad de Cantabria

Exmo. Sr. D. José Antonio **CAGIGAS**, Consejero de Cultura, Turismo y Deporte del Gobierno de Cantabria

Opening of the congress by the President of the Society, Prof. Dr. Ludwig **REISCH**, University of Erlangen-Nürnberg

10.45 – 12.30 h: Morning session

SECTION 1: Rock art of the Upper Palaeolithic in Europe

10.45 h: César GONZÁLEZ SAÍNZ – Santander:
Nouvelles recherches sur l'art pariétal paléolithique dans la région Cantabrique

11.15 h: Pablo ARIAS CABAL – Santander:
The Program of Archaeological Research at La Garma (1996-2002)

11.45 h: Javier ALCOLEA GONZALEZ, Rodrigo de BALBÍN BEHRMANN – Alcalá de Henares:
¹⁴C et style. La chronologie de l'art paléolithique à l'actualité

12.15 – 12.30 h: Discussion

12.30 – 14.00 h: Presentation of the data base

César GONZÁLEZ SAÍNZ, Roberto CACHO TOCA – Santander, Takeo FUKAZAWA – Tokyo:

Palaeolithic art in northern Spain. Photo VR Multimedia”

14.00 – 16.00 h: Lunch

16.00 – 18.00 h: Afternoon session**SECTION 1: Rock art of the Upper Palaeolithic in Europe**

16.00 h: Mario MENÉNDEZ FERNANDEZ, Eduardo GARCÍA, José M. QUESADA – Madrid:
El Paléolithico superior de la Cueva de la Güelga (Cangas de Onís, Asturias, España)

16.20 h: Diego GÁRATE MAIDAGAN – Santander:
Nouvelles recherches sur l’art pariétal paléolithique à la Grotte d’Arenaza (Galdames, Biscay, Espagne)

16.40 h: Pedro CANTALEJO DUARTE – Ardales, José RAMOS MUÑOZ, María del Mar ESPEJO HERRERÍAS, Rafael MAURA MIJARES – Cádiz:
Thèmes, techniques et formes d’exécution de l’art rupestre paléolithique de la Grotte de Ardales (Málaga)

17.00 h: Luis C. TEIRA, Roberto ONTAÑÓN – Santander:
Use of CAD techniques for the study of prehistoric art

17.20 h: Paweł VALDE-NOWAK – Kraków:
Obłazowa Cave – new light on Gargas hands?

17.45 – 18.00 h: Discussion

18.00 h: Inauguration of the poster exhibition**WEDNESDAY, 23.04.2003****9.30 – 13.00 h: Morning session****SECTION 2: Settlement patterns and economical strategies of the Upper Palaeolithic and Mesolithic**

9.30 h: Sabine GAUDZINSKI, Sylvie BERGMANN, Olaf JÖRIS, Jörg HOLZKÄMPER, Martina SENSBURG, Martin STREET, Elaine TURNER – Neuwied:
Late Upper Palaeolithic dwellings reconsidered

10.00 h: Jürgen VOLLBRECHT – Reichwalde, Ilse BOEREN – Stuttgart-Hohenheim:
Spatial patterns in an Late Palaeolithic site in Reichwalde, Saxony, Germany

10.30 h: Adriana Mabel CHAUVIN – Santander:
The lithic assemblages of layers 7 and 8 of La Garma A cave (Cantabria, Spain): a preliminary analysis

10.50 – 11.15 h: Discussion and coffee break

11.15 h: Pilar UTRILLA, Carlos MAZO, Rafael DOMINGO MARTÍNEZ – Zaragoza:
Une carte géographique datée de 11.700 BP dans le Magdalénien du bassin de l'Ebre

11.35 h: Thomas TERBERGER – Greifswald:
Refugia and recolonisation - the Last Glacial Maximum reconsidered

11.55 h: Stephan HOLDERMANN, Dieter SCHÄFER – Innsbruck:
“Early postglacial Europeans”: aspects of transalpine relationships of Mesolithic in Tyrol (Austria)

12.15 h: Claus-Joachim KIND – Stuttgart:
The Mesolithic open air site Siebenlinden 4, South West Germany: recent discoveries

12.45 – 13.00 h: Diskussion

13.00 h: TRANSFER to Santillana del Mar

Lunch in the Cafeteria of the Museum of Altamira

14.30 – 17.00 h: Visit of the **copy of the Altamira Cave** (guided groups of 20 persons) and of the **Altamira Museum**

17.00 – 18.15 h: Afternoon session

SECTION 3: Hugo Obermaier and the history of research

17.00 h: Christian ZÜCHNER – Erlangen:
Hugo Obermaier and the Hugo Obermaier Society

17.20 h: Jordi ESTÉVEZ, Assumpció VILA – Barcelona:
Obermaier and the construction of the spanish palaeolithic: a view from the 21st century

17.40 h: Oscar MORO ABADÍA – Santander:
Nouvelles perspectives de l'histoire de l'archéologie: Le *temps* dans l'Archéologie Préhistorique Française pendant la seconde moitié du 19^{ème} siècle

18.00 – 18.15 h: Discussion

18.15 – 19.00 h: Annual meeting (Mitgliederversammlung) of the Hugo Obermaier Society in the conference room of the Altamira Museum

19.00 h: Visit of **Santillana del Mar** and dinner

THURSDAY, 24.4.2003**9.30 – 14.00 h: Morning session****SECTION 4: Research into Lower and Middle Palaeolithic**

- 9.30 h: Ludwig REISCH – Erlangen:
Hunas near Hartmannshof, Lkr. Nürnberger Land, Bavaria. A Cave Site from the Upper Middle Pleistocene
- 10.00 h: Alvaro ARRIZABALAGA, María José IRIARTE, Mónica RIUZ-ALONSO – Vitoria:
Le gisement archéologique de Irrikaitz (Zestoa, Pays Basque)
- 10.20h : Salvador DOMÍNGUEZ-BELLA, José RAMOS MUÑOZ, Vicente CASTAÑEDA – Cádiz:
Raw materials and provenance areas of the lithic industry from the lower paleolithic open air settlement of Río Iro and Arroyo de la Cueva (Chiclana, Cádiz, Spain)
- 10.40 h: José RAMOS MUÑOZ, Vicente CASTAÑEDA FERNÁNDEZ, Darío BERNAL CASASOLA – Cádiz , Juan José DURÁN VALSERO – Madrid, Nuria HERRERO LAPAZ, Salvador DOMÍNGUEZ-BELLA – Cádiz:
La Cabililla de Benzú (Ceuta). Avance des études stratigraphiques, de la séquence et de la technologie lithique d'un gisement africain du Pleistocène Moyen et Supérieur dans l'environnement du Détroit de Gibraltar
- 11.00 h: Thomas WEBER – Magdeburg:
Menschenwerk und Affenarbeit – Überlegungen zur Unterscheidung altpaläolithischer Inventare von schimpansoiden "Nussknackerartefakten"
- 11.20 – 11.45 h: Discussion and coffee break

SECTION 5: The transition of Middle to Upper Palaeolithic

- 11.45 h: Manuel GONZÁLEZ MORALES – Santander:
Los inicios del Paleolítico Superior en la Región Cantábrica
- 12.15 h: Victoria CABRERA – Madrid, Federico BERNARDO DE QUIRÓS – León:
Hundred years at El Castillo cave: the end of the Neanderthals
- 12.35 h: María Dolores GARRALDA – Madrid:
Hugo Obermaier et les hommes du paléolithique dans la région cantabrique
- 12.55 h: Javier BAENA – Madrid:
The El Esquilieu Cave: a new Middle Paleolithic sequence in the western area of Cantabria
- 13.15 h: Ramón MONTES BARQUÍN, Emilio MUÑOZ FERNÁNDEZ – Altamira:
Variability of the archaeological record of the Middle Palaeolithic in the central sector of Cantabrian Spain: the reality beyond the Bordesian facies

13.40 – 14.00 h: Discussion

14.00 – 15.30 h: Lunch

15.30 – 19.45 h: Afternoon session

SECTION 5: The transition of Middle to Upper Palaeolithic

15.30 h: Nicholas CONARD – Tübingen:
New Research on the Middle and Upper Paleolithic in Swabia

16.00 h: Michael BOLUS – Tübingen:
The importance of the Swabian Aurignacian for the studies of the early Upper Paleolithic in Europe

16.20 h: Harald FLOSS – Tübingen:
Des nouveaux résultats sur le Châtelperronien, l'Aurignacien et le Gravettien dans l'est de la France – les exemples d'Azé et de Germolles en Saône-et-Loire

16.40 h: Rafael MORA, Jorge MARTÍNEZ MORENO, Ignacio de la TORRE – Barcelona:
La Roca dels Bous and the end of the Middle Paleolithic in the Northeast of Iberia

17.00 – 17.30 h: Discussion and coffee break

SECTION 6: Hunting strategies and ecology of the Middle and Upper Palaeolithic

17.30 h: Susanne MÜNZEL – Tübingen:
Subsistence patterns in the Upper and Middle Palaeolithic layers of Geissenklösterle, (Ach valley, Swabian Jura, South western Germany)

17.50 h: Jorge MARTÍNEZ MORENO – Barcelona:
Neanderthal behaviour and Middle Palaeolithic fauna

18.10 h: Raquel FERNÁNDEZ – Santander:
Les premiers pêcheurs dans la région cantabrique

18.30 h:
19.00 h: Werner MÜLLER – Neuchâtel:
Small-game exploitation in Upper Palaeolithic context – only for the taste of it?

19.30 – 19.45 h: Discussion

19.45 h: Closing of the congress

FRIDAY, 25.04.2003**Excursion I**

Visit of the most important Palaeolithic cave sanctuaries of Asturias: **EL PINDAL** near Pimiango and **TITO BUSTILLO** in Ribadesella, the Palaeolithic sites of **CUETO DE LA MINA** and **LA RIERA** near Posada de Llanes, the Mesolithic shell middens (concheros) of **EL PENICIAL** and **CUEVAS DEL MAR** near Nueva and the **"IDOLO DE PEÑA TÚ"**, a famous rock art site and monument of the late Copper Age.

SATURDAY, 26.04.2003**Excursion II**

Visit of the most important Palaeolithic cave sanctuaries of Cantabria: **EL CASTILLO**, **LA PASIEGA**, **LAS CHIMENEAS** and **LAS MONEDAS** near Puente Viesgo and **COVALANAS** and the Palaeolithic site of **EL MIRÓN** near Ramales de la Victoria.

Detailed information on the excursions will be available during the congress

Section 1: Rock art of the Upper Palaeolithic in Europe

Javier ALCOLEA GONZALEZ, Rodrigo de BALBÍN BEHRMANN – Alcalá de Henares:

¹⁴C et style. La chronologie de l'art paléolithique à l'actualité

La chronologie de l'art rupestre paléolithique a été soumise à une polémique assez vivante pendant la dernière décennie. L'émergence des méthodes de datation absolue des pigments pariétales et les premières dates absolues des peintures quaternaires furent interprétées pour toute une partie de la recherche comme l'attestation du décès des méthodes de datation de base stylistique. On inaugura ainsi l'époque appelée post-stylistique, dont la caractéristique principale est la négation de la validité chronologique des critères de style, et le rejet fondamental au cadre évolutif des graphies paléolithiques proposé par A. Leroi-Gourhan.

Quinze ans après les datations absolues se sont multipliées, en proposant un degré de cohérence avec le cadre de Leroi-Gourhan beaucoup plus proche de ce que prétendaient les soit-disants post-stylistiques. Dans ce travail, nous analysons tant la proposition de ceux-ci, comme les critères qui sont à la base de la construction du cadre évolutif de Leroi-Gourhan, la plus part d'entre eux fondés sur des relations chronologiques bien affirmées et beaucoup d'autres sur des ensembles rupestres correctement datés par des critères archéologiques.

Notre conclusion, confrontant les dates absolues et les ensembles datés par l'archéologie avec le système de Leroi-Gourhan, est que ce système continue à être valable dans le fondamental et que les critères de style, dépourvus de quelques concepts aujourd'hui dépassés, comme la synchronie de la construction des ensembles rupestres ou la validité chronologique des aspects associatifs ou de composition, sont ils encore un outil nécessaire pour la compréhension chronologique du phénomène graphique paléolithique. Aussi même notre travail veut-il démontrer que le raisonnement post-stylistique est-il fondé, paradoxalement, sur une vision stylistique des graphies paléolithiques, et que plus que s'affronter au cadre évolutif de Leroi-Gourhan, pose un retour aux schémas historicistes du Paléolithique Supérieur soutenus par l'École Française de la première moitié du vingtième siècle.

Pablo ARIAS CABAL – Santander:

The Program of Archaeological Research at La Garma (1996-2002)

La Garma is the name of a hill located 11 km east of Santander, in the central coastal area of the Cantabrian region (northern Spain). There, an impressive concentration of archaeological sites, ranging from ancient Palaeolithic to the Middle Ages, has been discovered. Anyhow, the most important evidences have been located in the Lower Gallery (*Galería Inferior*). The original entrance of this cave remains closed since the Late Pleistocene, which has favoured an exceptional preservation of Palaeolithic wall art and Magdalenian floors, including stone structures related to settlement and ceremonial activities. Since 1996, the Group of Prehistory of the University of Cantabria is leading an interdisciplinary team which is dealing with the investigation on the whole area of La Garma. In this lecture, the organization of this project will be presented, and the main results obtained so far will be discussed.

Pedro CANTALEJO DUARTE – Ardales, José RAMOS MUÑOZ, María del Mar ESPEJO HERRERÍAS, Rafael MAURA MIJARES – Cádiz:

Thèmes, techniques et formes d'exécution de l'art rupestre paléolithique de la Grotte de Ardales (Málaga)

Les peintures et gravures paléolithiques de la Grotte de Ardales ont été découvertes par H. Breuil en 1918. Depuis lors, pratiquement aucune étude n'a été faite, ni sur la Grotte en elle-même, ni sur l'art que celle-ci présente. La Grotte de Ardales a une grande extension (1.600

mts. à parcours). Elle a plus de 300 lieux avec graphismes préhistoriques. Et surtout se détachent assez de panneaux avec gravures.

La Grotte de Ardales est, en ce moment, l'unique Grotte du sud de la Péninsule Ibérique qui présente les quatre thèmes basiques de l'art des communautés de chasseurs-cueilleurs: signes, mains, faune, et figures humaines féminines. Il faut indiquer la présence de plus de cinquante cervidés, vingt équidés, deux chèvres, un bovidé et un témoignage de faune «rare»: serpents, oiseaux, poissons, mustélidés...

Les pigments et les moyens techniques employés dans les gravures sont très variés. Elle présente une diversité de formes d'exécution. Les différentes manifestations attestent beaucoup d'agréations, et permettent de projeter une marque chronologique très grande, depuis les concepts normatifs Gravettiens à Magdaléniens.

Nous apportons aussi des témoignages archéologiques documentés dans la Grotte: lithiques et faunes. Enfin nous faisons actuellement une étude du territoire qui permet de comprendre la mobilité des communautés de chasseurs-cueilleurs dans le sud de la Péninsule Ibérique, entre les lieux de la côte et de l'intérieur dans le cadre des diverses stratégies sociales et économiques.

Diego GÁRATE MAIDAGAN – Santander:

Nouvelles recherches sur l'art pariétal paléolithique à la Grotte d'Arenaza (Galdames, Biscay, Espagne)

L'art rupestre de la grotte d'Arenaza était découverte dans l'année 1973 par la famille Gorrochategui pendant les fouilles archéologiques dirigés par J.M. Apellániz et J. Altuna dans ce moment là. De toutes manières, il faudra attendre jusqu'à l'année 2000 pour avoir une publication spécifique sur les représentations artistiques (Gorrotxategi 2000).

On a commencé des études dans la grotte d'Arenaza depuis l'année 1998 avec des objectives précises:

- Réviser les parois de la grotte pour chercher des nouvelles peintures ou gravures paléolithiques. On a trouvé quelques nouvelles figures et on a réinterprété quelques autres. Au moment il y a 25 unités graphiques identifiées dans la grotte.

- Refaire les relevés des figures. On a refait des relevés des toutes les représentations connus et inédites.

- Reinterpréter l'ensemble ornée en relation avec des autres similaires dans la région cantabrique. La découverte des nouvelles ensembles ornées dans les dernières années au défilé de Carranza (Arco A, Arco B-C et Pondra) et dans les grottes de El Pendo et La Garma ont changé les interprétations sur les peintures rouges ponctuelles au Cantabrique et aussi leur chronologie estimée.

- Analyser les pigments pour mieux connaître leur nature et comparer les recettes, et aussi pour vérifier l'origine anthropique des certains figures. On a fait dix-neuf prélèvements sur des peintures rouges à base d'oxyde de fer. L'hématite naturelle a pu être utilisée comme source de pigment pour plusieurs figures et le mélange fréquent par ailleurs d'hématite et d'argile ne se retrouve que sur trois prélèvements dans la grotte d'Arenaza.

On montrera les résultats spécifiques des ces études dans notre intervention à la réunion.

César GONZÁLEZ SAÍNZ – Santander:

Nouvelles recherches sur l'art pariétal paléolithique dans la région Cantabrique

Deux aspects nouveaux sont à remarquer dans l'état actuel de la recherche sur l'art rupestre Paléolithique à la région Cantabrique: l'accélération dans les derniers 20 ans dans la découverte de nouveaux gisements, et, d'autre côté, l'application de nouveaux procédés de documentation et analyse (méthodes d'analyse de pigments et, spécialement, de datations absolues). L'évaluation des nouveaux apports permet de nuancer quelques connaissances acquises et proposer des nouvelles idées sur l'activité graphique paléolithique régionale.

La distribution des plus d'un centaine de gisements pariétales permet la définition, pas seulement des sites particuliers, mais des aires préférentielles et nucleus caractéristiques, avec des séquences artistiques récurrents à plusieurs reprises (nucleus de Mont Castillo et des rivières du Calera et du Carranza, par exemple). D'un autre côté, la variabilité des gisements rupestres (en ce qui concerne la taille et le format, ou composition iconographique) est bien supérieur à ce qui a été considéré traditionnellement; le rôle, ou la même signification pour les paléolithiques de ces types de grottes décorés a dû être très varié. Ce qui permet nuancer l'idée qui a lié l'art rupestre à grandes centres cérémoniales un peu spéciales, et avec fréquence, séparé des activités et lieux de la vie quotidienne. Les analyses de distribution de effectives pariétales à centres comme La Pasiega ou La Garma, renforcent la liaison de l'art pariétal avec d'opérations et activités très variés. On peut refuser, d'autant, la séparation taxative entre gisements d'habitat et gisements cérémoniales, ou dans les cas avec registre complexe (Altamira, Castillo, Tito Bustillo, par exemple), la distinction stricte entre les aires d'habitation et les aires de décoration (ou cérémoniales).

D'un autre côté, sont chaque fois plus remarquables à la recherche actuel, quelques nouveaux procédés d'analyse, bien des pigments, ou de datation absolue de l'art pariétal, avec résultats ^{14}C -AMS, TL et U/Th). Une considération critique des résultats disponibles, intégré dans les procédés traditionnelles (spécialement la datation stratigraphique), permet quelques réflexions sur les deux grandes phases artistiques à la région: un art archaïque (jusqu'au Solutréen moyen ou final), avec une variabilité synchronique très supérieur à ce qui on pense traditionnellement en ce qui concerne les procédés techniques et expressives, ou à l'emplacement des compositions. Ce premier art manifeste une forte stabilité expressive jusqu'à 18.000 BP environ, avec abondants particularités régionales et, au même temps, liens très forts avec l'art d'autres régions péninsulaires et françaises. L'époque final du Solutréen et les premiers étapes du Magdalénien (entre ca. 18.000 et 14.500 BP) sont très complexes du point de vue artistique; avec les données chronologiques actuelles, elle semble une époque d'accélération des changes, encore avec d'abondants particularités iconographiques de longue tradition à la région (signes abstraits, ou l'abondance de biches). L'art magdalénien à partir de 14.500, par contre, est beaucoup plus international, bien que spécialement liée avec la région nord des Pyrénées, jusqu'au final de ce premier cycle artistique en ces régions, autour du 11.500 BP, pendant l'Allerød.

Mario MENÉNDEZ FERNANDEZ, Eduardo GARCÍA, José M. QUESADA – Madrid:

El Paleolítico superior de la Cueva de la Güelga (Cangas de Onís, Asturias, España)

La cueva de la Güelga se localiza en un valle cerrado de montaña en la zona oriental de Asturias. Dista de la costa unos 15 Kmts. y constituye junto con la cueva del Buxu, los Azules y otras del entorno medio del río Sella, un área de desplazamiento logístico de los grupos humanos que ocupaban la bahía de Ribadesella (Tito Bustillo, la Cueva, San Antonio, la Lloseta, el Cierro, etc.) durante el Paleolítico superior. Esta relación es apreciable en el rupestre y mobiliario de ambas áreas durante el solutrense y el magdaleniense. Precisamente sobre el magdaleniense hemos trabajado en la Cueva de la Güelga desde 1990, aportando una importante colección de arte mueble asignable al segmento último del Magdaleniense inferior cantábrico, en torno a los 14.000 BP. En la actualidad hemos comenzado los trabajos de otra zona del abrigo rocoso, donde hemos localizado niveles industrialmente asignables al Chatelperronense, cuyas dataciones ^{14}C AMS lo sitúan en torno a 30.000 BP. Nuestra comunicación presentará la colección de arte mueble magdaleniense de la cueva de la Güelga en su contexto de territorialidad y comunicará los primeros datos obtenidos en la zona del yacimiento donde se localizan niveles de transición del Paleolítico medio al superior.

Luis C. TEIRA, Roberto ONTAÑÓN – Santander:

Use of CAD techniques for the study of prehistoric art

In this paper we expose several examples of Prehistoric Art analysis focused on the achievement of synthesis and interpretative images through the employ of CAD tools. Using some Palaeolithic and Post Palaeolithic cases we propose different procedure models depending on the execution technique of the representations. Finally, some considerations are stated in relation with the objective and subjective features involved in the documentation process of this significant aspect of the Archaeological Record.

Paweł VALDE-NOWAK – Kraków:

Oblazowa Cave – new light on Gargas hands?

The industries discovered in the Middle and Upper Palaeolithic layers of the Oblazowa Cave in the village of Nowa Biała, in the community of Nowy Targ in south Poland (West Carpathians), represent the typical inventories known from a lot of other hunting sites. Only the assemblage of layer VIII (early eastern Gravettian, Pavlovian) has a very unusual character which differs fundamentally from the rest of the material.

The results of the multidisciplinary research in the Oblazowa Cave have not yet been synthetically published up to now. Only some papers have been published during the excavations dedicated mainly to the discovery of the oldest boomerang in the world. This huge weapon was manufactured of a mammoth tusk. In these publications the remains of level VIII were thought to be from a more or less typical hunting camp, perhaps of seasonal character, far away from the basic camps situated e.g. in Moravia. The inventory was declared a special set of weapons composed by a boomerang and the stone implements like tools needed for the next hunting expedition. However, a few of the other elements of layer VIII looked very strange in its context and did not correspond to the interpretation as a camp-site. After a long and intensive analysis and based on our present knowledge of all elements of layer VIII, the stratigraphy of the cave and the general archaeological context of the Oblazowa, we are now inclined to suggest a totally different interpretation of the findings.

In the chamber of the cave the Pavlovian people delimited the area of the circle of massive granite and quartzite boulders and dug a nearly 2 m-deep pit in the entrance area of the cave. As a consequence, the construction was on a platform higher than the heads of the people entering the cave. The boomerang was situated in the centre of this stone circle. In the vicinity of the boomerang a distal thumb phalanx of an adult human left hand was discovered. And a second phalanx was near the granite boulder. Part of the inventory of this concentration are also three perforated teeth of arctic fox, one Conus-shell pendant, a fragment of another Conus shell, a bone perforator, two mining tools in the form of wedges (one with parallel arched line ornament), bone bead and stone implements of a raw material imported over long distances. Some of these artefacts have traces of a red colour pigment rich in iron. The human distal left phalanx, the bone perforator and the horn-core wedge were AMS dated to about 30,000 years BP.

All of these elements can be explained as the remains of a ceremonial place, because here we have a lot of relatively rare and unusual and precious artefacts, which are well-preserved and in undisturbed condition. In the sediments do not contain the typical cultural rubbish found on other sites. The presence of only two parts of human fingers and the fact that no other parts of the human skeleton could be found although the sediment was sieved with fine sieves seems to point to practices known from a lot of primitive societies, like for instance Bushmen's, Hottentot's, Prairie-Indiana or Aborigines.

In this context the famous hand stencils of Gargas and other cave sanctuaries in Western Europe should be mentioned. As far as we know, these are from the Gravettian. In literature, there have been long discussions about whether these hands are mutilated. Perhaps, the finds

of Oblazowa Cave can help us to understand the meaning of the hands of Gargas. Maybe they are an indication that, at least occasionally, fingers were cut as an offering.

Section 2: Settlement patterns and economical strategies of the Upper Palaeolithic and Mesolithic

Adriana Mabel CHAUVIN – Santander:

The lithic assemblages of layers 7 and 8 of La Garma A cave (Cantabria, Spain): a preliminary analysis

This paper focuses on the lithic industry of layers 7 and 8 of La Garma A cave and our primary aim is the reconstruction of the lithic reduction sequence.

Most of the raw material exploited at La Garma A cave is the flint available in the immediate surroundings, of Lower Cretacic age. Less represented is the flint from Upper Cretacic, which is also available in the area, but its sources are more restricted. In any case, both of them are easily accessible and can be considered of local origin. Other materials, such as quartz and quartzite, though locally present, are very poorly represented. Only a few artifacts are made in jasper, a lithic resource which is not found within a 100 km radius.

In some cases, the whole reduction process is not present. At least the first step of nodule decortication has not been accomplished in the site for the production of blades and we hardly think that many medium sized blades could have been introduced in the site under that form. On the other hand, the production of bladelets of at least two different modules seem to have been entirely manufactured in situ starting from nodules or little pebbles with minimum preparation or, most frequently, from flakes used as cores.

The retouched toolkit represents around the 5% of the lithic industry and are frequently, although not exclusively, made on laminar blanks. The dominant types are burins and backed tools, although the presence of splintered pieces of a particular standardized morphology in layer 8 could be of potential interest.

Sabine GAUDZINSKI, Sylvie BERGMANN, Olaf JÖRIS, Jörg HOLZKÄMPER, Martina SENSBURG, Martin STREET, Elaine TURNER – Neuwied:

Late Upper Palaeolithic dwellings reconsidered

A current research focus of the Neuwied-based Palaeolithic Research Centre (Forschungsbereich Altsteinzeit) of the Römisch-Germanisches Zentralmuseum concerns the dynamics of Late Glacial land use patterns in western Central Europe. Crucial for the understanding of this subject are investigations of settlement-internal organisation, which can best be studied by the analysis of evident and latent archaeological structures at sites of this period.

The important Rhineland open-air Upper Magdalenian settlement sites Gönnersdorf and Andernach (lower horizon) (13,500 cal. BC) have provided complex evident structures, the most important of which can be interpreted as habitations. Comparative analysis of these features, recording for example the location and dimensions of paving and pits, shows the existence of a standardized repertoire of behaviour for the construction and use of Upper Magdalenian dwellings. This is also clearly indicated by analysis of latent features revealed by repetitive spatial patterning of many classes of archaeological material within and around the structures.

Analysis of similar and contemporary features at the Magdalenian site of Oelknitz in Thuringia confirms and adds to the observed canon of behavioural patterns recognized in the Rhineland. Comparable systematic and structured intra-site spatial organisation also continues to be recognizable at Final Palaeolithic (Federmessergruppen) settlements.

Stephan HOLDERMANN, Dieter SCHÄFER – Innsbruck:

“Early postglacial Europeans”: aspects of transalpine relationships of Mesolithic in Tyrol (Austria)

The Ullafelsen is an early Mesolithic site in the Fotscher Valley on a small outlook at 1869 metres above sea level. It is located in the southern area of the Stubai Alps in Tyrol (Austria) about 25 km south-east of Innsbruck. The subject of this presentation is the current state of the analysis of the silex raw-material and internal site dynamics.

The site has been investigated for the past few years. Artefact and raw-material analysis already shows that the assemblage is integrated into a supraregional Mesolithic context which is unique in Austria, northern Italy and Switzerland up to now.

So far more than 4500 silex artefacts have been excavated within an area of 21 square meters. Because of the lack of calcareous rocks in the Stubai Alps bones or bone-artefacts were not perceived at Ullafelsen.

Until today 5 hearths have been discovered. This indicates the first multiphase use in Austrian Mesolithic research. Radiocarbon and botanic analysis of the charcoal from the hearths shows that the site is dating to the Preboreal as well as to the Boreal stage. Further more the analysis gives evidence for climatically-driven changes in the tree-line between the two periods of use.

Preliminary studies of the use of the artefacts and their distribution show a spatial difference in function. Consideration of the tools, especially the geometric microliths, indicates a clear connection with hunting activities which is also confirmed by the use-wear analysis by A. Pawlik and the proof of rehafting by the use of organic cement, while scrapers, burins, borers and other similar tools speak for an association with a base camp at the same time. For this reasons the overall interpretation is that Ullafelsen was a kind of seasonal base camp for hunting activities.

Useable silex material does hardly exist in the Central Alps. So it is likely that silex-raw materials were transported to the site. The raw material comprises chert, radiolarian chert and mountain crystal. Expert investigation of the lithic materials by J. Affolter and S. Bertola concluded that different areas in the chalk-rich part of the Northern and the Southern Alps (Mt. Baldo, Monti Lessini and/or Nonstal) were the geological origin of most of the used materials. Other raw materials prove long-distance relations (Swiss, Bavaria) which geographically lead outside the Alps. This indicates that long-distance communication-routes, connecting different high-alpine areas, existed during the early Holocene. This and some technological and typological aspects of the assemblage also imply that the (South-German) Beuronians and (North-Italian) Sauveteriens had cultural contacts.

Claus-Joachim KIND – Stuttgart:

The Mesolithic open air site Siebenlinden 4, South West Germany: recent discoveries

In 2001 and 2002 the fourth mesolithic open air site was excavated in Siebenlinden. The site is situated on the outskirts of Rottenburg in the county of Tübingen, Baden-Württemberg (Southwestern Germany). Again the finds were deposited in loamy alluvial sediments in the pastures along the banks of the Neckar River. Four archaeological layers were identified. The stratigraphy is reaching from three early Mesolithic layers with radiocarbon dates at about 8.800 BP, 8.500 BP and 8.000 BP to a late mesolithic layer with dates at about 6.800 years BP. Each layer contains stone artefacts, bone fragments and burnt plant materials. In each layer fireplaces were discovered. The individual objects remain in their original positions and make it possible to view the internal structure of the Mesolithic sites.

Thomas TERBERGER – Greifswald:

Refugia and recolonisation - the Last Glacial Maximum reconsidered

There is increasing evidence that Western Central Europe has not been a completely deserted area in the time period around the last Glacial Maximum (Terberger & Street 2002). The talk discusses connections between the climatic development and human settlement in the period between ca. 23.000 and 16.000 BP. There is weak evidence for a short settlement phase in Western Central Europe immediately before the maximum cold at the time of the Proto-Solutrén (Aurignacien V) in Western Europe. The early/middle Solutrén seems to be connected with the coldest-driest phase with population movements to more southern areas and a hiatus in Western Central Europe. It seems likely that in course of the Laugerie-Interstadial better living conditions led to a period of recolonisation of more Northern parts. Probably parallel to the latest Solutrén in Western Europe we find few sites with Badegoulian elements in Western Central Europe. These sites show close connections to sites like Grubgraben in Lower Austria and argue for supraregional contacts and influences at that time. After this phase follows another dry period that led to a longer hiatus in Western Central Europe. Until the major lateglacial recolonisation there is only isolated evidence for settlement in Western Central Europe.

TH. TERBERGER & M. STREET, Hiatus or continuity? New results for the question of pleniglacial settlement in Central Europe. *Antiquity* 76, 2002, 691-698.

Pilar UTRILLA, Carlos MAZO, Rafael DOMINGO MARTÍNEZ – Zaragoza:

Une carte géographique datée de 11.700 BP dans le Magdalénien du bassin de l'Ebre

On connaît dans la moyenne vallée de l'Ebre 24 sites magdaléniens, dont 15 sont placés sur les montagnes des Pre-Pyrénées, 6 sur la Chaîne Ibérique dans le bassin du Jalón et 2 dans la chaîne du Maestrazgo. En ce qui concerne les sites datés qui renferment des stratigraphies intéressantes on peut signaler les grottes de Chaves (Huesca), Zatoya et Abauntz (Navarra), Parco (Lérida) et les abris de Forcas I (Huesca), Peña 14 et Peña del Diablo (Saragosse) et Vegara (Soria). Par rapport à l'industrie osseuse il faut remarquer les baguettes, sagaies et ciseaux des grottes d'Abauntz (niveau e) et Chaves, le harpon à un rang de barbelures de la grotte Bolichera (sur un niveau remanié) et les pendeloques de la grotte de Gato 2 (sur bois de cerf et décoration de traits obliques). En ce qui concerne l'art mobilier c'est la grotte d'Abauntz qui a fourni trois des plus beaux exemples connus de l'art mobilier sur pierre des Pyrénées et de l'Espagne Cantabrique.

Le bloc 1 peut être interprété en relation à la topographie de l'emplacement de la grotte. En effet, les figurations de la face 1 semblent reproduire les paysages environnants, la topographie de la vallée où s'ouvre la grotte; c'est-à-dire, il s'agit d'une carte géographique similaire à celle que Ch. Züchner a signalé pour Gargas ou Svoboda pour Dolni Vestonice. On peut voir un méandre, peut-être une rivière, qui traverse la pierre à la moitié et qui sépare deux groupes de bouquetins et de cerfs. Même, on peut voir l'esquisse d'une montagne, identique à celle qui s'observe en front de l'entrée de la grotte. Une mare d'eau sur la zone plaine serait, enfin, représentée par les cercles situés derrière un anthropomorphe. Le paysage où la grotte est située serait ainsi reproduit: deux rochers séparés par le ruisseau et un emplacement stratégique de la grotte sur le rocher droit qui permet de contrôler le passage du gibier pour l'étroit. En plus, les animaux représentés sont caractéristiques du paysage: des bouquetins sur les rochers, des cerfs dans la forêt située derrière de la grotte et bovinés sur la prairie qui s'ouvre devant.

Jürgen VOLLBRECHT – Reichwalde, Ilse BOEREN – Stuttgart-Hohenheim:

Spatial patterns in an Late Palaeolithic site in Reichwalde, Saxony, Germany

During rescue operations in 1998 in the active part of the lignite mine of Reichwalde, 11 well defined concentrations of flint artefacts were excavated in an area of about 2.000 m². The

excavation brought to light more than 23.000 stone artefacts. These finds were encountered in a sandy soil which is penetrated by the roots of a well preserved early Alleröd forest relict. The preservation of the forest relict was caused by covering limnic sediments. This exceptional situation is investigated by an interdisciplinary group of scientists in an area of about 8.500 m².

The archaeological material (about 75%-80% are smaller than 1 cm) includes besides stone artefacts, almost exclusively made from erratic flint, some 270 burnt bone fragments that were encountered in the vicinity of one small hearth. Further bone preservation is not given, further evident structures are restricted to possible other hearth features.

An analysis was conducted in order to obtain an insight into the spatial organisation of the site. It included extensive refittings which resulted in a high rate of refitting. Use wear is preserved on the stone artefacts but the investigation program is still not finished.

The buried forest with a series of trunks and in-situ stumps mainly consists of pine (*Pinus sylvestris*) and some birches (*Betula spec.*) of up to 20m height; the maximum age was 250 years. Up to now the forest is dated dendrochronologically to a time span of 14.050-13.450 cal BP.

The tree morphology (form and number of the branches, root form and development, dimension of the trunks) and age structure of the examined trunks lead us to conclusions about the structure of the forest. In the tree-ring pattern of pine we find periodic variations that could inform us on the rise and fall of the groundwater-level and fire scars that allow us to make conclusions about fire frequency and seasonal phases of the fires.

Pollenanalytical and macrobotanical investigations of lake and mire sediments record the start of organic sedimentation and reforestation during Bølling interstadial with a birch forest. At the end of Bølling pine was spreading and dominated the forest during Late Glacial and early Holocene. In connection with dendroecological results, these investigations allow us to reconstruct the plant societies and in cooperation with the other disciplines, we get a better understanding of the paleo-environment.

M. FRIEDRICH, M. KNIPPING, P. VAN DER KROFT, A. RENNO, S. SCHMIDT, O. ULLRICH & J. VOLLBRECHT 2001: Ein Wald am Ende der letzten Eiszeit. Untersuchungen zur Besiedlungs-, Landschafts- und Vegetationsentwicklung an einem verlandeten See im Tagebau Reichwalde, Niederschlesischer Oberlausitzkreis. – Arbeits- und Forschungsberichte zur Sächsischen Bodendenkmalpflege 43, 21-94.

M. KNIPPING, A. RENNO, M. FRIEDRICH, O. ULLRICH & J. VOLLBRECHT 2001: Excursion: Reichwalde. In: Guide-Book INQUA Subcommision of the Eurosiberian Holocene, Late Vistulian and Early Holocene of the Region between the Spree and Odra Rivers, May 1-5, 2001 Bautzen-Dychów.

Section 3: Hugo Obermaier and the history of research

Jordi ESTÉVEZ, Assumpció VILA – Barcelona:

Obermaier and the construction of the spanish palaeolithic: a view from the 21st century

We will analyse the work of Hugo Obermaier about Spanish Palaeolithic from an epistemological and theoretic opposite point of view. A close to a century time distance from the beginnings of its work allows us to risk a balance. We will highlight the disturbances of ideological factors and the successive political events in the construction and deconstruction of the author's theories. We will also consider the scientific and social context of Obermaier's work.

Situated in the beginnings of our 21st century we will pose our own perspective about some issues contained in Obermaier's writings. We will argue that some elements can be rescued

while some others were not sufficiently verified but substituted by others that succeeded basically because of political opportunism.

Oscar MORO ABADÍA – Santander:

Nouvelles perspectives de l'histoire de l'archéologie: Le *temps* dans l'Archéologie Préhistorique Française pendant la seconde moitié du 19^{ème} siècle

La réflexion sur le temps apparaît omniprésent dans toutes les démarches de la recherche en sciences humaines. Dans le cas de l'archéologie, depuis les années quatre-vingt nous constatons l'existence d'un important courant critique, surtout dans le champ de la théorie archéologique, qui a essayé de déterminer la spécificité du temps construit par l'archéologue et son influence sur la manière dont nous comprenons le passé. Cependant, ce mouvement critique n'a pas été très important pour l'histoire de l'archéologie. Il suffit de repasser les travaux classiques de Glyn Daniel ou des ouvrages plus récentes (comme celui de Trigger), pour s'apercevoir comment la réflexion sur le temps fut souvent assimilée soit à la description des typologies, soit à l'explication du développement dans les techniques de datation.

Dans notre exposé, nous voulons proposer quelques éléments pour une réflexion critique sur le temps dans le champ de l'histoire de l'archéologie. Etant donné que nous ne pouvons pas repasser ici toute l'histoire de notre discipline, nous voulons concentrer notre examen sur un pays (France) et sur une période (1850-1900). Pendant la deuxième moitié du 19^{ème} siècle, les archéologues françaises (Lartet, Mortillet et Piette) développèrent plusieurs systèmes de chronologie relative qui sont fondamentaux à une bonne compréhension de l'histoire de notre discipline. Nous voulons examiner ici la conception du temps sous-jacente à ces systèmes-là et à toute l'archéologie préhistorique pendant cette époque. Afin de capter la complexité de cette problématique, nous travaillerons dans deux niveaux analytiques différents.

En premier lieu, nous voulons suggérer une analyse comparative des systèmes de chronologie relative développés par Édouard Lartet, Gabriel de Mortillet et Édouard Piette. Contrairement à la majorité de travaux sur l'histoire de la préhistoire (qui se sont limités à la description de ces systèmes) nous essayerons de saisir la signification, la fonction et le contexte des systèmes proposés par ces auteurs.

En second lieu, nous examinerons la conception du temps qui précède et rend possible ces chronologies en analysant le rapport de celle-ci avec le Transformisme, qui fut la théorie dominante en France dans les champs de la paléontologie et de la biologie pendant la seconde moitié du XIX^{ème} siècle.

Christian ZÜCHNER – Erlangen:

Hugo Obermaier and the Hugo Obermaier Society

Hugo Obermaier was born in Regensburg, Germany, on 29 January 1877. After graduation from school, he was at first trained to be a Catholic priest (1895-1900). From 1901 to 1904 he then studied prehistoric archaeology in Vienna. In his 1908 habilitation he discussed the subject "The stone tools of the Early Palaeolithic in France" ("Die Steingeräte des französischen Altpaläolithikums"). The most important stations of his eventful life were: Paris (1911-1914), Madrid (1914-1936), and Fribourg in Switzerland (1937-1946). He died in Fribourg on 12 November 1946. His life was marked by the wars and revolutions of the first half of the 20th century. Two times he lost all the material resulting from his work. Again and again he had to start from scratch. Nevertheless, his life-work had a great impact on research, most of all in Spain.

Unlike in France and Spain, research into the Quaternary period and the Palaeolithic was little acknowledged in Germany for a long time. So, in 1951 Lothar F. Zotz founded the Hugo Obermaier Society in Regensburg, Obermaier's home town, as a forum for discussion. The reference to this scholar was chosen to express the international and interdisciplinary nature of the Society. In the years 1952-1973 conferences and big excursions within Europe

alternated on an annual basis. An outstanding event was the excursion to Spain in 1958. Owing to organizational reasons, since 1975 only conferences in Germany and abroad (Austria, Switzerland, Czech Republic) have been held.

It is an honor for the Hugo Obermaier Society to be guest in Spain – the second home of the great scholar – on its 45th annual conference, on the occasion of the 100th anniversary of the discovery of El Castillo. After all, the investigation into this cave is in great part Hugo Obermaier's merit.

Section 4: Research into Lower and Middle Palaeolithic

Alvaro ARRIZABALAGA, María José IRIARTE, Mónica RIUZ-ALONSO – Vitoria:

Le gisement archéologique de Irikaitz (Zestoa, Pays Basque)

Le Pays Basque est situé dans une aire de passage entre la Péninsule Ibérique et le continent européen. Pendant la XXe siècle ont été nombreuses les trouvailles d'industries du Paléolithique inférieur dans son versant septentrional. D'une manière plus récente, on détecte aussi des occupations au sud des Pyrénées, dans des dépôts qui présentent des témoignages stratigraphiques occasionnels. Parmi ces derniers-ci, nous faisons remarquer le gisement de Irikaitz (Zestoa, Gipuzkoa), en cours de fouille depuis 1998. Les cinq campagnes de fouille développées permettent commencer à décrire son niveau IV, que nous datons d'une manière préliminaire dans la dernière période interglaciaire. On décrira aussi le contexte archéobotanique (Palynologie et Anthracologie) du site.

Salvador DOMÍNGUEZ-BELLA, José RAMOS MUÑOZ, Vicente CASTAÑEDA – Cádiz:

Raw materials and provenance areas of the lithic industry from the lower paleolithic open air settlement of Río Iro and Arroyo de la Cueva (Chiclana, Cádiz, Spain)

In this work, we abord from a multidisciplinary point of view, the archaeometric and archaeological study of these materials. Mineralogical and petrological study of the industry and their comparison with the geological raw materials of the surrounding area were carried out. As result of these comparative studies, we can confirm in general a local origin for the raw materials these hunter and gatherer communities utilised. Archaeological sites of Río Iro and Arroyo de la Cueva present lithic chipped industry made in different raw materials.

Archaeological sites correspond with an open air settlement placed in fluvial terraces or closed lacustrine environments, in Mediterranean warm climate conditions.

Statistical relations between raw material type and final use of the artefact were carried out in an attempt to define the possible technological relations between both parameters.

José RAMOS MUÑOZ, Vicente CASTAÑEDA FERNÁNDEZ, Darío BERNAL CASASOLA – Cádiz, Juan José DURÁN VALSERO – Madrid, Nuria HERRERO LAPAZ, Salvador DOMÍNGUEZ-BELLA – Cádiz:

La Cabililla de Benzú (Ceuta). Avance des études stratigraphiques, de la séquence et de la technologie lithique d'un gisement africain du Pleistocène Moyen et Supérieur dans l'environnement du Déroit de Gibraltar

Un accord de collaboration entre l'Université de Cadix et la cité autonome de Ceuta a permis de réaliser des prospections archéologiques au cours de l'année 2001. Nous avons localisé quelques gisements préhistoriques, avec témoignage de groupes humains chasseurs-cueilleurs et bergers-paysans. La Cabililla de Benzú a été fouillé par une équipe de préhistoriens et d'archéologues de l'Université de Cadix l'été de 2002. Ce gisement a une situation stratégique sur matériaux triassiques dolomitiques, à 200 m de l'actuel ligne de côte et à coté du ruisseau Algarrobo, à 63 m.s.n.m. d'altitude. Il se trouve dans la région du Déroit de Gibraltar, dans un environnement Atlantico-Méditerranéen.

Le gisement a deux aires très définies: Abri et Grotte. L'Abri a des dépôts paléolithiques dans un espace supérieur à 50 m², avec une puissance supérieure à 5 mts. La Grotte est d'à peu près 25 m² sur un plan, avec deux salles avec tendance presque circulaire. Elle a un dépôt de sable inférieur avec 1 m de puissance.

Nous présenterons l'état d'avancement des travaux dans l'Abri que comprend le nettoyage végétal, topographique (A. Luque et F. Otero), dessin de la cavité, et analyse d'un dépôt du Pléistocène Moyen et Supérieur. L'étude geoarchéologique a permis de définir onze niveaux stratigraphiques. Ils s'agit de niveaux détritiques auxquels se superposent des lessivages de solifluxion. L'étude sédimentaire a permis les attribuer à des moments froids et humides, et chauds et humides, respectivement. La découverte dans l'intérieur d'industrie lithique taillée et d'une faune témoignent d'une présence humaine entre le Pléistocène Moyen et Supérieur. Nous avons fait un sondage stratigraphique dans l'Abri. Nous avons travaillé dans le niveau 7, d'une grande dureté. Des nucléus, éclats et racloirs, ainsi que débris de faune fossile. Nous avons complété le sondage dans les niveaux 4 y 5, avec l'extraction de blocs, qui sont encore en étude dans le laboratoire. On peut remarquer que la technologie appartient au Mode 3 (Moustérien). Dans la Grotte, nous avons fouillé 6 m², avec deux niveaux stratigraphiques, ce qui a donné un témoignage d'occupation d'une communauté tribale, avec évidences d'élevage (bovidés, chèvres) et une technologie lithique de microlithes géométriques, grattoirs, lames, ainsi que d'une sépulture avec pendeloques à serpentine.

Nous avons envoyé quelques échantillons pour la datation absolue (U/Th), TL (A. Millán, P. Benítez), OSL (M. Bateman, D. Calado), pour les dépôts de l'Abri et de ¹⁴C pour la Grotte. La puissante séquence climatique a été analysé, dans l'étude pollinique par B. Ruiz, la faune par A. Arribas e I. Cáceres, les études pétrologiques par S. Domínguez et S. Chamorro et la technologie lithique par J. Ramos, V. Castañeda et N. Herrero. Les ossements humains de la sépulture néolithique sont en étude par A. Rosas.

Cabililla de Benzú va apporter des information sur la reconstruction du milieu naturel, de la stratigraphie, chronologie et modes de vie des occupations humaines chasseurs-cueilleurs et tribales néolithiques dans l'environnement du Détroit de Gibraltar.

Ludwig REISCH – Erlangen:

Hunas near Hartmannshof, Lkr. Nürnberger Land, Bavaria. A Cave Site from the Upper Middle Pleistocene

The remains of the „Steinberg-Höhlenruine” near Hunas, discovered by F. Heller in 1956 within an old quarry, are located in an Upper Jurassic dolomite formation of the Franconian Alb, about 40 km east of Nürnberg and 520 m above sea level. First excavations by Heller between 1956 und 1964 revealed a sequence of more than 12 meters of well stratified cave sediments with abundant faunal remains and several archaeological levels below the already collapsed roof of a large cave. However, a test trench opened at the end of the 1964 season indicated that the sequence investigated by then represented only the upper part of a cave-filling of probable 20 meters or more. In 1982/83 the quarry was reactivated and, in order to anticipate the complete destruction of the site, new and still ongoing excavations have been started in 1983. The upper part of the sequence was investigated once again and enabled us to re-examine the results published by Heller (1983) and to complete them in a much higher resolution. In the meantime the excavation has reached levels not yet or only insufficiently described by Heller.

The youngest finds in the cave, observed mainly by Heller, come from layers E, D and F which consist of strongly weathered and in places even loamy dolomite rubble. Layer D yielded with *Cepaea hortensis* and *Stephanorhinus kirchbergensis* elements of a very temperate fauna of probably last interglacial age. A small lithic assemblage, discovered in layer E, has been attributed by G. Freund to a Charentian with Levallois technique. In 1986 an isolated hominid M3 inf., probably from Neandertal man, was discovered at the boundary

between layer F and G, corresponding to a final stage of the penultimate glacial. Layer G1, a deposit of coarse to medium sized angular rock debris with a very poor Fauna - poor in species as well as in pieces - seems to represent the climax of the penultimate glaciation and is replaced to the bottom by layers of less coarse and increasingly weathered rubble (G2, G3, H, I and K). This part of the sequence, much better subdivided during the last years, yielded abundant faunal remains, mostly from micromammals, but also from large mammals, birds, fishes, reptiles, amphibia and molluscs, altogether more than 130 different species of animals. They indicate changing climatic and ecological conditions. While the upper part (G2 – G3) is clearly dominated by inhabitants of cold and open environments as *Lemmus* and *Dicrostonyx*, these species diminish and disappear in the underlying levels (H – L) whereas more pretentious species gradually emerge, e.g. *Macaca*, *Apodemus*, *Clethrionomys*, *Muscardinus*, *Bufo*, different reptiles and *Acicula polita*, indicating forest vegetation. From a biostratigraphical point of view the presence of the intermediate form of *Arvicola cantiana* / *A. terrestris* as well as *Ursus spelaeus deningeroides* indicate an Upper Middle Pleistocene age. It is supposed, that the stratigraphic sequence investigated so far represents the period from OIS 5 down to OIS 7. Artefacts too have been found in different levels throughout layers G2 to L. Those from G2 and G3 have been considered by G. Freund to belong to a Charentian of Proto-Quina type; the new finds from H, K and L, however, show an even more archaic character.

The cave ruin in the eastern slope of the Steinberg near Hunas is unique in Bavaria and will provide an important contribution to a better knowledge of the Upper Middle Pleistocene in southern Germany.

F. HELLER et al. 1983: Die Höhlenruine Hunas bei Hartmannshof (Landkreis Nürnberger Land) – Eine paläontologische und urgeschichtliche Fundstelle aus dem Spät-Riß. Mit Beiträgen von K. BRUNNACKER, G. FREUND, J.Th. GROIB, D. JANOSSY, W. SCHOCH und F. SCHWEINGRUBER, C. STADIE und R. STREIT. Quartär-Bibliothek, Bd. 4, Bonn.

J.Th. GROIB, B. KAULICH, L. REISCH 1998: Zum Stand der Ausgrabungen in der mittelpleistozänen Höhlenruine von Hunas. In: Das archäologische Jahr in Bayern 1997 (Stuttgart) 25-28.

L. REISCH 1995: Stop 18: Hunas – A Middle Pleistocene sediment sequence in a cave ruin. – Quarternary field trips in Central Europe (Hrsg. W. Schirmer), Vol. 2, München 782 f.

Thomas WEBER – Magdeburg:

Menschenwerk und Affenarbeit – Überlegungen zur Unterscheidung altpaläolithischer Inventare von schimpansoiden “Nussknackerartefakten”

Die neuerdings im afrikanischen Regenwald entdeckten Abfälle von Schlagsteinen zur Öffnung tropischer Nüsse werden mit altpaläolithischen Inventaren verglichen, da die Bearbeiter der “schimpansoiden Industrien” eine Ähnlichkeit mit dem – insbesondere afrikanischen – Altpaläolithikum zu erkennen glauben. Eine detaillierte Gegenüberstellung von “äffischen” und altpaläolithischen Inventaren lässt jedoch Unterschiede erkennen – von der Zusammensetzung nach den einzelnen Grundformkategorien bis zu den Dorsalflächenmerkmalen der beim Nüsseknacken unabsichtlich entstehenden, im Falle des Oldowans wohl eher “gewollt” hergestellten Abschläge. Daraus leitet sich die Forderung ab, in Zukunft die Erzeugnisse von “Schimpansenkultur” und *Homo habilis* gleichermaßen detailliert vorzulegen, um eine solide Basis für Vergleiche und damit für Aussagen zu den ältesten Spuren frühmenschlicher Tätigkeit zu gewinnen.

Section 5: The transition of Middle to Upper Palaeolithic

Javier BAENA – Madrid:

The El Esquilleu Cave: a new Middle Paleolithic sequence in the western area of Cantabria

During the last seven years our research group have developed different field works in the Hermida's region, area located in the western part of Cantabria, within a more ambitious project whose objectives are directed to the reconstruction of the Middle Paleolithic occupation. Now, we have some interesting results specially referred to the relevant archaeological sequence of the El Esquilleu Cave. This is a recent site with a very long middle Paleolithic sequence only partially excavated. Principal results, regarding its geoarchaeological stratigraphy, the paleo-environmental reconstruction and the technological data, are presented in the paper.

Michael BOLUS – Tübingen:

The importance of the Swabian Aurignacian for the studies of the early Upper Paleolithic in Europe

The Swabian Jura in southwestern Germany is the most important find region of the Aurignacian in Germany. Well stratified cave sites in the Lone and Ach valleys such as Vogelherd, Sirgenstein, Geißenklösterle, and Hohle Fels, all with multiple Aurignacian layers, are reference sites for the understanding of the early Upper Palaeolithic of central Europe (Conard & Bolus in press).

The key innovations of the Swabian Aurignacian include numerous examples of figurative art; musical instruments; abundant and diverse objects of personal ornament; numerous new forms of bone, ivory and antler tools; blade technology, numerous types of lithic end scrapers, diverse forms of burins, and lateral and pointed retouched blades using steep Aurignacian retouch.

New radiocarbon dates indicate that the Aurignacian of the region spans the period from ca. 40-30 ka BP, with the early Aurignacian appearing to begin in the range between roughly 35 and 40 ka BP, and by no later than 29 ka BP the Gravettian was well established in the region. These dates are consistent with the "*Kulturpumpe*" hypothesis, that important cultural innovations of the Aurignacian and Gravettian in Swabia predate similar developments in other regions of Europe.

The Danube Corridor Hypothesis was established to demonstrate that modern humans may have entered Europe from the Southeast and penetrated the interior of the continent via the Danube valley. Early Upper Palaeolithic, but not clearly Aurignacian, deposits from the cave sites of Bacho Kiro and Temnata in Bulgaria, situated in the valleys of tributaries of the Danube, are in the same way consistent with this scenario as are some other, though few, Aurignacian sites in Europe which are of similar age as the early Aurignacian in Swabia. Among them, Keilberg-Kirche in Bavaria and Willendorf II,3 in Austria have to be mentioned.

At nearly the same time evidence from Mediterranean Europe with sites such as Fumane in Italy and Arbreda in Spain may well indicate a second broadly contemporaneous colonization of southern Europe. Finally, for the site of El Castillo a local development of an early aurignacoid industry out of the local Middle Palaeolithic is being discussed (Cabrera et al. 2001).

V. CABRERA, J.M. MAILLO, M. LLORET & F. BERNALDO DE QUIROS 2001: La transition vers le Paléolithique supérieur dans la grotte du Castillo (Cantabrie, Espagne): la couche 18. *L'Anthropologie* 105, 505-532.

N.J. CONARD & M. BOLUS in press: Radiocarbon Dating the Appearance of Modern Humans and Timing of Cultural Innovations in Europe: New Results and new Challenges. *Journal of Human Evolution*.

Victoria CABRERA – Madrid, Federico BERNARDO DE QUIRÓS – León:
Hundred years at El Castillo cave: the end of the Neanderthals

Nicholas CONARD – Tübingen:

New Research on the Middle and Upper Paleolithic in Swabia

In recent years the Department of Early Prehistory and Quaternary Ecology of the University of Tübingen has intensified its research into the Paleolithic of the Swabian Jura. In the late 1990s prospection was conducted in the Lone Valley and combined with two seasons of excavation in front of Hohlenstein. Throughout the 1990s and since 2000, building on the work of Joachim Hahn, excavations have been conducted continuously at Hohle Fels in the Ach Valley near Schelklingen. Finally after a decade of inactivity, fieldwork was conducted between 2000 and 2002 at Geißenklösterle Cave in the Ach Valley near Blaubeuren.

This work has led to a wealth of new Middle and Upper Paleolithic find horizons that have served to advance the discourse about these periods and the debate on the colonization of Europe by modern humans, as well as the extinction of the Neanderthals. Parallel to the excavations considerable effort has been invested in dating the later phases of the Middle Paleolithic and all periods within the Upper Paleolithic. The chronostratigraphic data document the very early presence of Aurignacian groups starting around 40.000 years ago and of Gravettian groups starting about 30.000 years ago. These early dates and supporting contextual information suggest that modern humans reached the Upper Danube region quickly by travelling along the Danube corridor. The early dates for Upper Paleolithic technology, art and musical instruments suggest that this region reflects, or lies close to, centers of important Upper Paleolithic innovations. Nowhere have any indications of interstratification of Middle and Upper Paleolithic finds been documented. Thus, although one might expect that archaic and modern humans interacted with each other, no evidence for such events has yet been recovered in the Swabian Jura.

This paper presents the newest findings from recent fieldwork and laboratory work on the Middle and Upper Paleolithic of the Swabian Jura. Highlights include many new radiocarbon dates and stratigraphic observations, new artifact assemblages and new finds of Upper Paleolithic art.

Harald FLOSS – Tübingen:

Des nouveaux résultats sur le Châtelperronien, l'Aurignacien et le Gravettien dans l'est de la France – les exemples d'Azé et de Germolles en Saône-et-Loire

Dans l'est de la France et notamment en Bourgogne, se trouve une région importante d'occupation intense du paléolithique supérieur ancien et moyen. Les gisements les plus riches de cette période sont Solutré au sud de la Saône-et-Loire et l'ensemble de grottes et d'abris sous roche sur les bords de la Cure à Arcy (Yonne). Mais en Bourgogne du sud, c'est-à-dire entre Chalon-sur-Saône et Mâcon, nous observons plusieurs autres sites, soit de plein air, soit en grotte, qui ont livrés d'intéressants témoignages du paléolithique supérieur. Nous ne citons ici que les exemples de Volgu, Culles-les-Roches et St-Martin-sous-Montaigu.

Notre exposé se concentre sur deux autres sites intéressants, Azé près de Cluny et la grotte de La Verpillière à quelques kilomètres ouest de Chalon-sur-Saône. À Azé, nous avons fouillé ces dernières années un niveau d'habitat de plein air datant, d'après la typologie de l'industrie lithique, du gravettien. Malgré une dilatation verticale importante du matériel, nous avons reconnu une structure intacte et différenciée autour d'une grande dalle en grès qui a probablement eu la fonction de siège ou de support de travail.

La grotte de La Verpillière près de Germolles qui a été fouillée en partie à la fin du 19^{ème} siècle a livré, à côté d'un ensemble micoquien qui se caractérise par la présence de coups de tranchants dits Pradnik, des éléments du Moustérien de tradition Acheuléen, du Châtelperronien et de l'Aurignacien qui sont malheureusement dispersés dans plusieurs collections. Notre projet de recherche est fondé sur plusieurs axes: une étude approfondie des industries lithiques de la phase transitoire paléolithique moyen-paléolithique supérieur, une datation au ¹⁴C des fossiles directeurs de l'industrie osseuse aurignacienne, des sondages dans les déblais des anciennes fouilles, l'établissement d'une topographie du site et, à long terme, la tentative de fouille dans des sédiments intacts au-dessous de blocs effondrés devant l'entrée de la grotte. Ce dernier projet pourrait aider à reconstituer la position stratigraphique de chaque ensemble du paléolithique moyen final et du paléolithique supérieur ancien qui demeurent, jusqu'à maintenant, complètement inconnus.

Un autre aspect de notre exposé consiste en l'intégration d'Azé et de Germolles dans l'ensemble des sites du paléolithique supérieur dans l'est de la France, c'est-à-dire de l'Alsace et de la Champagne au nord jusqu'à la côte méditerranéenne au sud. La Bourgogne se trouve à l'extrême est de la répartition du Châtelperronien. D'après les datations au ¹⁴C, le Châtelperronien de la grotte du Renne à Arcy-sur-Cure n'est pas plus ancien que l'Aurignacien ancien du Jura Souabe, de Solutré ou du midi de la France. Cette observation nous amène au point principal de notre exposé, sur la question de la relation entre derniers néandertaliens (MtA, Châtelperronien) et premiers hommes modernes (Aurignacien) dans cette région. L'ensemble très moderne du Châtelperronien d'Arcy-sur-Cure est-il le fruit d'une évolution complètement indépendante ou pourrait-il être issu des influences des premiers hommes modernes qui occupent l'est de la France à peu près au même moment? Nous espérons que l'étude du site de Germolles, qui en est juste à ses débuts, pourra un jour apporter des réponses à cette question décisive pour la compréhension des derniers néandertaliens et de nous-mêmes.

María Dolores GARRALDA – Madrid:

Hugo Obermaier et les hommes du paléolithique dans la région cantabrique

Malgré les nombreux travaux de recherche développés par H. Obermaier sur la Préhistoire de la région Cantabrique, à notre connaissance, il n'y a qu'un seul site où il se trouva des restes anthropologiques, les vrais seuls témoins du phénotype de ces populations ancestrales.

Ce site est la célèbre Cueva de El Castillo à Puente Viesgo, où les fouilles d'Obermaier, Breuil et Wernert, entre 1911 et 1914, révélèrent une séquence stratigraphique cruciale, allant de l'Acheuléen jusqu'à l'Âge du Bronze. Des restes humains paléolithiques furent trouvés dans un niveau qu'ils appelèrent *Aurignacien β* et dans un niveau du Magdalénien ancien. Le but de ce travail est de présenter ces fossiles, à la lumière des connaissances actuelles, et en tenant compte des importantes recherches développées par V. Cabrera et F. Bernaldo de Quirós pendant plus de 20 ans dans ce même gisement. Les nouveaux restes anthropologiques qu'ils y ont trouvé dans le Moustérien et l'Aurignacien archaïque confirment l'importance exceptionnelle de la Cueva de El Castillo, tel que cela avait été déjà signalé par Obermaier, même si ce dernier ne pouvait pas imaginer l'intérêt anthropologique de certains de ces fossiles.

Manuel GONZÁLEZ MORALES – Santander:

Los inicios del Paleolítico Superior en la Región Cantábrica

Desde la excavación de la Cueva del Castillo entre 1910 y 1914 por Hugo Obermaier y Henri Breuil, los yacimientos cantábricos han tenido un papel central en la definición de la secuencia estratigráfica de los inicios del Paleolítico Superior y han sido claves para comprender la transición desde el Musteriense. Casi cien años más tarde, las investigaciones en curso en varios yacimientos cantábricos, y de manera singular las dataciones

radiocarbónicas de niveles aurinienses antiguos de Castillo, en Cantabria, y La Viña, en Asturias, vuelven a situar a la región en el centro del debate sobre el origen de los humanos modernos y sus primeros testimonios materiales en el Occidente de Europa; y nuevas secuencias estratigráficas de larga duración, como las de las cuevas de La Garma o El Mirón empiezan a aportar nueva luz sobre este tema y su contexto ambiental. Por último, las recientes novedades de aplicación de técnicas de datación absoluta a manifestaciones rupestres de Asturias, Cantabria y el País Vasco ofrecen también datos de gran interés sobre los inicios del arte paleolítico, como expresión singular de la mente simbólica de la humanidad moderna.

Ramón MONTES BARQUÍN, Emilio MUÑOZ FERNÁNDEZ – Altamira:

Variability of the archaeological record of the Middle Palaeolithic in the central sector of Cantabrian Spain: the reality beyond the Bordesian facies

Practically up to the present date, the variability in Middle Palaeolithic assemblages in Cantabrian Spain has been explained by the existence of different Mousterian facies, defined by F. Bordes and applied systematically in the region (with his own adaptations) by L.G. Freeman. However, the latest studies of the available archaeological material (and not only the lithic assemblages), suggest a very different kind of variability from that described by the Bordes method. The exact geographical location of the sites, the seasonality that some of the occupations seem to show, the availability of raw materials and the adaptation of the *chaines opératoires* to those materials, certain changes appreciable over time and adaptations to environmental changes seem to have been decisive in conditioning the character of regional Mousterian assemblages, rather than the existence of “cultural variables”. In fact, and despite some differences which must be considered, there appears to be a common industrial (cultural?) background, quite distinct from the classic variability described for the assemblages. This paper reviews the present state of knowledge on Middle Palaeolithic sites in the centre of Cantabrian Spain (between the valleys of the Rivers Sella and Agüera) and analyses the variability of the assemblages with a wider perspective than that found in classical typological studies.

Rafael MORA, Jorge MARTÍNEZ MORENO, Ignacio de la TORRE – Barcelona:

La Roca dels Bous and the end of the Middle Paleolithic in the Northeast of Iberia

The excavation of the Roca dels Bous site on a surface of c. 40 m² has recorded the archaeological unit N10. The until now obtained ¹⁴C AMS datings point to a chronological frame for this unit between 38.800 ± 1.200 BP and > 46.000 BP. This temporal range coincides with the Middle-Upper Palaeolithic transition.

The sedimentary context in which N10 has been recorded shows that it can be characterized as an occupation level inside a cavity and that its formation can be associated to low energy processes. The sedimentary filling is formed by the basal rock decomposition and its physical and chemical disturbances, showing good preservation conditions for the Middle Palaeolithic record.

The employed excavation methodology has allowed to record at least three different temporal moments of occupation for the archaeological unit N10. This 20 cm thick palimpsest does not allow to differentiate the reuse phases at horizontal level, either to assignate the recorded material to different moments. This has leaded us to define N10 as a single entity for its study.

It has been essential for differentiating these internal phases, the record of 10 combustion structures located on its surface. Most of them are small plain hearths that probably were used for heating purposes. An ash refusal (“vindage”) and a large bowl-shaped hearth (more than 3 m²) have also been recorded. In the latter, some phases of reuse have been observed. These types of hearths are not usually mentioned related to sites of this period.

The analysis of the lithic assemblage shows the existence of different knapping strategies related to the chosen raw material; specifically it can be observed a different treatment for silex and metamorphic rocks. These differences can be related to different factors as the proximity to raw material sources, the type of blanks, or the systems of reduction applied depending on the rock properties.

Both the questions raised related to technological strategies, and the described pyrotechnological behaviours, could indicate the existence of internal changes within these Neanderthal groups, just before or at the same time of the emergence of the anatomically modern *Homo sapiens* in Iberia, which justify the relevance of the Roca dels Bous site for the analysis of this period.

Section 6: Hunting strategies and ecology of the Middle and Upper Palaeolithic

Raquel FERNÁNDEZ – Santander:

Les premiers pêcheurs dans la région cantabrique

La recherche archéologique dans la Région Cantabrique a commencé il y a cent ans. Pendant tout ce temps, les chercheurs n'ont pas examiné l'importance de la pêche dans l'économie des groupes de chasseurs-cueilleurs. Cependant, aujourd'hui la quantité d'information disponible sur la pêche pendant les temps préhistoriques est suffisante pour proposer une étude globale et pour tirer quelques conclusions sur ce sujet.

Nous croyons qu'il y a plusieurs raisons pour croire que la pêche fut une ressource fondamentale pour les habitants de cette région: elle est une ressource facile à prédire, les poissons sont des animaux faciles à capturer (même, s'il n'existe pas une technologie spécifique) et les conditions écologiques de la Région Cantabrique (abondance de fleuves et proximité à la mer) ont dû faire de la pêche une ressource toujours disponible.

Pour ces raisons, et en partant de la variabilité écologique du climat et de la géographie qui a déterminé la disponibilité de ressources, nous avons fait une recherche dans laquelle nous avons étudié plusieurs aspects en rapport à la pêche dans la Région Cantabrique: la quantité et la variabilité diachronique des données (pour bien savoir s'il y a une évolution dans l'intensité de l'utilisation du ressource, ainsi que dans le type de faune), la possibilité d'établir différentes zones dedans la Région Cantabrique, l'étude de la variation dans les méthodes de capture employées.

Jorge MARTÍNEZ MORENO – Barcelona:

Neanderthal behaviour and Middle Palaeolithic fauna

Cantabrian region shows an important number of Middle Palaeolithic sites with faunal assemblages, which have been studied mainly by Professor J. Altuna. This has made possible to gain a coherent view about frequencies of species (NISP, NMI), sex and age of death, body part representation, and more recently detailed taphonomic observations (cut-marks, carnivore activity).

This important data base has permitted the construction of a general frame about human behaviour for the Cantabrian Middle Palaeolithic. This clue issue is directly linked to the analysis of subsistence, for which faunal data play a central role. Unfortunately, the variables (species, NISP, NMI) analyzed in this discussion are not always informative about Neanderthal behaviour.

The discussion is now centred on faunal diversity and its relation to the debate "opportunism vs. specialized hunting system", "hunting vs. scavenging" and the possible use of bones as tools. These topics are relevant for the reconstruction of Neanderthal activities and behaviour. In this context, the influential proposal made by L. Straus gains relevance,

since he has described a scenario for the Cantabrian Middle Palaeolithic deeply linked to the notion of “Neanderthal incapacity”.

In this presentation, the most abundant assemblages of the area (Morin 17, Pendo XVI and Lezetxiki VI) will be described and they will be discussed in relation to the behavioural interpretation suggested by Straus. At the same time, it would be necessary to analyze the faunal assemblages from a contextual perspective to pose a clue question about subsistence along the Middle Palaeolithic.

Werner MÜLLER – Neuchâtel:

Small-game exploitation in Upper Palaeolithic context – only for the taste of it?

The exploitation of small game is frequently assumed to have gained a widespread significance only towards the end of the Paleolithic. This is then attributed to human population growth pulses, which demanded for intensified and thus broadened exploitation of the available animal resources, hence including swift and difficult-to-catch small game. Yet both, the contemporaneousness and the causal link between human population growth pulses and exploitation of agile small game have been disputed. While the contemporaneousness is easier to disprove than to prove, it depends on large and reliable data sets, and will not be treated here. The causal link, and thereby the motivation for hunting agile small game, will be addressed, using two Magdalénien sites from Switzerland as examples (Hauterive-Champréveyres and Neuchâtel-Monruz).

In these two sites the wild horse dominates heavily in terms of NISP and weight of fragments. The preponderance of the horse is equally apparent when the acquired biomass (MNI multiplied by average weight) for each species is considered. On the contrary, when comparing the number of hunted individuals of the different species, it becomes clear that the horse accounts for less than one third of the total number. It might seem far-fetched to compare a hunted horse with a hunted hare or passerine bird, yet for our line of argument it is instrumental to realize that each hunted individual represents one successful hunting event. It is obvious, however, that the spent energy (input) as well as the acquired raw material (output) of a hunting event differ markedly from species to species. And it is equally clear that it is the sum of input and output that has to be positive, i.e., to make hunting a certain species profitable. Consequently should a shift in the exploitation of a species be indicative of a shift in the profitability of its acquisition. The answer to the ensuing question, of how the profitability of a species can change, has to be sought either on the input or the output side.

The input could be positively changed by a new weapon or hunting method allowing a more energy-efficient hunt. The proponents of the above mentioned broad-spectrum-revolution hypothesis argue that the motivation for hunting small game derived from the pressure of increased human population. This implies that, either, they had the means to exploit a certain species, but opted not to do so but under pressure, or, they developed the means to exploit this resource of swift small game only when coming under pressure. It is difficult in this scenario to discern cause and effect.

On the other side could the output have changed in the way that the value of certain raw materials (e.g., feather, bone, etc.) was judged differently. This point reiterates that it is not only the amount of the raw material but also its quality, which leads us back to our example: At the site of Monruz approximately 45 horses were hunted. With only one additional horse, the equivalent amount (weight) of raw material (meat, skin, bones, intestines, tendons, etc.) of 100 hares could have been acquired. It seems implausible that they should have stopped short of hunting a 46th horse because this resource was exhausted and that they were then forced to exploit small game. Although difficult to estimate it seems reasonable to assume that the input of hunting 100 hares exceeds by far that of hunting one horse. The more plausible conclusion is, therefore, that the quality of the raw material is one of the crucial factors for hunting small game.

Susanne MÜNZEL – Tübingen:

Subsistence patterns in the Upper and Middle Palaeolithic layers of Geissenklösterle, (Ach valley, Swabian Jura, Sout western Germany)

Excavations at Geissenklösterle were started in 1973 when E. Wagner (Landesdenkmalamt) opened up a test-ditch, and were continued from 1974 until 1991 by J. Hahn and from 2000 until 2002 by N. Conard. The site has provided a stratigraphic sequence from at least 50.000 up to 10.000 BP. The deepest layers exposed contain finds from the Middle Palaeolithic (AH IV-VIII), stratified above this is a Lower Aurignacian (AH III) layer (dated to c. 38.400 BP ^{14}C -AMS and c. 40.200 BP TL), followed by an Upper Aurignacian (AH II, with split based points), which was dated by ^{14}C -AMS to c. 33.500 BP and with TL to c. 37.000 BP. The Upper Aurignacian layer (AH II) has produced four carved ivory figurines, a limestone pebble painted with three colours, as well as fragments of two flutes made from bird bones. The horizon above the Upper Aurignacian contains a Gravettian (AH I) occupation with several living floors (^{14}C -AMS date c. 27-29.000 BP). After the Gravettian there appears to have been a hiatus in the occupation of Southwestern Germany, probably caused by the Last Glacial Maximum. A small fireplace (^{14}C -AMS date c. 13.000 BP) is the only evidence of a Magdalénian occupation of the cave.

This paper compares the faunal evidence of Upper and Middle Paleolithic layers in Geißenklösterle and other sites in the Ach Valley. The most frequent game animals in the Upper Palaeolithic layers are horse, mammoth and reindeer. They are mainly represented by certain skeletal elements, which were preferably used as raw material for the production of organic tools.

The large variety of organic tools from bone, antler and ivory and refuse of their production in the Upper Paleolithic stands in contrast to the almost non existing organic tool industry in the Middle Paleolithic layers. The only example of a bone point comes from Große Grotte, another Middle Palaeolithic cave in the Ach Valley.

A taphonomic explanation of this unbalance in tracking *Homo sapiens* and Neandertal activities on bone will be attempted.

Lydia ZAPATA PEÑA – Vitoria:

The human ecology of the Upper Paleolithic in Southwestern Europe: the fine vegetation picture

Climatic changes during the Late Quaternary produced major changes in the distribution of vegetation and resources. The presence of trees and the location of refugia in different areas of Europe in full glacial conditions has long been a matter of debate (Willis et al. 2000, Tzedakis & Bennet 1995). Many species present now in Northern Europe were in refugia in the South at the height of the glaciation. Recent studies using molecular genetic markers have been used to describe species genetic variation and support this view (Hewitt 1999 and 2000). Atlantic Iberia, with a varied topography and warm valleys would particularly provide adequate refugia and the Western Pyrenean region may have been a key expansion route in the dispersion of Iberian trees to northern locations.

In spite of this, some archaeological interpretations for atlantic Iberia stress the importance of an open vegetation dominated by steppe or tundra during the Upper Palaeolithic with a minor representation of deciduous trees. The evidence obtained by the analysis of archaeological wood seems to provide a different picture. Different authors have recently stressed that plant macrofossils need to be studied in order to refine and correct palaeoenvironmental interpretations based on pollen analysis alone (among others, Birks & Birks 2000, Willis et al. 2000). Plant macrofossils can often be identified with greater taxonomic precision, tend to be much more locally distributed from their source and reflect local flora and vegetation. We will provide results of some recently studied sites in order to

readress this question. Particularly, the cave of Antoliñako Koba on the coast of Biscay has offered an interesting sequence that includes well defined Aurignacian, Gravettian, Solutrean and Magdalenian contexts with a significant representation of broad leaved trees being used as fuelwood.

H.H. BIRKS & H.J.B. BIRKS 2000: Future uses of pollen analysis must include plant macrofossils. *Journal of Biogeography* 27: 31-35.

G.M. HEWITT 1999: Post-glacial re-colonization of European biota. *Biological Journal of the Linnean Society* 68: 87-112.

G.M. HEWITT 1999: The genetic legacy of the Quaternary ice ages. *Nature* 405: 907-913.

P.C. TZEDAKIS, K.D. BENNET 1995: Interglacial vegetation succession: a view from Southern Europe. *Quaternary Science Reviews* 14: 967-982.

K.J. WILLIS, E. RUDNER, P. SÜMEGI 2000: The Full-Glacial Forests of Central and Southeastern Europe. *Quaternary Research* 53: 203-213.

Poster presentations

Esteban ÁLVAREZ FERNÁNDEZ – Salamanca:

L'utilisation des mollusques marins dans la préhistoire

Les premières preuves de l'exploitation des mollusques marins on les trouve déjà pendant le Mousterien, comme nous pouvons le constater dans quelques gisements d'Europe occidentale (par exemple Moscerini à Lacio, Italie), ou l'Homme de Neanderthal ne les ramassait non seulement dans un but alimentaire mais qu'il les utilisait aussi pour la fabrication de racloirs unifaciales. Pendant le Paléolithique supérieur les preuves de cette exploitation sont plus abondantes et ils sont utilisés comme nourriture, support pour l'élaboration de la parure (principalement réalisées avec les gastéropodes sans but alimentaire comme *Trivia sp.* or *Littorina obtusata*) et pour la réalisation d'objets d'art mobilier, ainsi que pour son utilisation comme récipients pour liquides ou pour l'ocre ou bien comme cuillères (comme *Pecten sp.*, *Patella sp.* or *Mytilus sp.*). Les plus importantes preuves de cette exploitation apparaissent à partir du Magdalénien en faisant de l'amas coquilles le plus notable signe d'exploitation des mollusques marins.

De même, avec l'apparition de la céramique, utilisant les coquillages des mollusques pour l'élaboration même (utilisation comme dégraissant) et pour l'élaboration de la décoration de leurs parois, on met en valeur les décors imprimés avec le bord ventral crénelé du *Cardium sp.* ou avec l'apex de la *Columbella rustica*.

Walpurga ANTL – Wien:

The gravettian camp site at Grub/Kranawetberg near Stillfried (Lower Austria)

In 1993 the Natural History Museum Vienna started archaeological investigations at the Gravettian site Grub/Kranawetberg near Stillfried in the March Valley with a trial trench. Two years later we found the western part of a dwelling structure. The layers of both trough-shaped fireplaces and the cultural layers show a repeated use of the site. According to recent results different zones within this part of the site become more and more evident. In the western part we found traces of a dwelling structure – small pits (GrA-9065 24.930 ± 240 BP), possibly rests of a construction, correspond with a sudden decrease of finds outside these traces. Inside the "construction" we have a light brown cultural layer (main layer GrA-9063 24.620 ± 230 BP) with plenty of red ochre, snail-shells collected as adornments and ivory beads. There are only few rather fragmented animal bones. In the eastern part of the structures we found the first fireplace (GrA-9066 24.830 ± 230BP). Between this fireplace and a second one found in 2001/2002 there is a high density of stone tools, flakes and bone fragments (app. 1000 pieces/m²) representing a central zone of activities.

8 cm above the main layer there is a second living floor (upper layer) which intensifies from southwest to northeast. In 2002 we found another horizon with scattered artefacts and animal bones above this second living floor.

Among the stone tools microgravettes and microliths are dominant, followed by retouched blades and bladelets. Scrapers, burins and borers are distinctively less frequent. Despite of many modified fragments there are only few tools made of bone and ivory. The variety is also limited – points, spatulas, awls, fragments of pins and modified antler of reindeer.

Approximately 50 pieces of dentalium and perforated shells of mussels and snails have been used as ornaments. More than 90 ivory beads and pendants represent the biggest assemblage of bone adornments of the austrian palaeolithic so far. The beads with two adjoining heads resemble pieces found in Southern Moravian sites. Most of the perforated items are heads of beads which cannot be compared to complete bead types. The bigger perforated pendants are different types being the unique example within the material of Grub/Kranawetberg. The majority of the beads and pendants, in particular the beads with two adjoining heads, light up the relations to Southern Moravia and Eastern Europe. In Austria itself there exist practically no analogies. Even the few pieces of the Willendorf II sequence cannot be compared to this material.

A flake of obsidian from Eastern Slovakia found in the cultural layer and a Kostienki-type point collected on the surface emphasize the importance of examinations concerning eventual relations to Eastern Europe.

Pablo ARIAS CABAL, Miguel Á. FANO MARTÍNEZ – Santander, Bordeaux:
Program of archaeological sampling in Mesolithic shell middens of eastern Asturias (Spain)

The study of the Mesolithic shell middens (*concheros*) is among the main topics of the archaeological research of the Prehistory of the northern coast of Spain since the early investigations of the Count of Vega del Sella in the beginning of the twentieth century. It is interesting to stress that Vega del Sella's work was strongly influenced by Hugo Obermaier advice. In fact, it was the great Bavarian archaeologist who proposed the successful term "Asturian" (*Asturiense*) for the Mesolithic shell middens of eastern Asturias and Western Cantabria.

In this poster we will present the preliminary results of a program of archaeological sampling in Asturian shell middens that we have developed from 2000 to 2002. The main goals of this project were:

- To increase the knowledge on the composition of these breccias (only a few sites have been excavated with modern techniques of sampling).
- To establish a precise chronology for the development of these deposits. That will also make possible a more realistic evaluation of the synchronicity of the sites, and thus allow an improvement of the spatial approaches.
- To confirm whether or not the pottery or other items usually associated with the Neolithic were used in the late phases of the shell middens.
- To provide samples of charcoal and shell for the determination of the parameter ΔR in the Cantabrian coast.

The location of human remains in two of the sites that were sampled, the caves of Poza l'Egua and Colomba, has permitted us to make contributions to the study of the funerary behaviour of the Mesolithic groups of the coastal area. Besides, it has been possible to get samples of collagen for stable isotopes analysis ($\delta^{13}C$ and $\delta^{15}N$). The results of these analyses will be compared with Mesolithic individuals from inland areas (Cueva de Los Canes) and other human rests of this period preserved in Museum collections. This will enable us to make a more realistic approach to the importance of marine resources in the subsistence systems of the last hunter-gatherers of the region.

Angel ARMENDÁRIZ – Santander:

Anton Koba: Un gisement Azilien dans les Pyrénées Occidentales (Pays Basque)

On présente le gisement d'Anton Koba (Gipuzkoa, Pays Basque), fouillé en 1985-93 et encore en cours d'étude. Dans cette grotte, sous des occupations relatives au Chalcolithique et à l'Âge de Bronze, on a trouvé un niveau azilien stratigraphiquement bien isolé, qui a livré nombreux outillage en silex, quelques pièces en os et nombreux restes de faune, appartenants essentiellement à des bouquetins.

Miguel Á. FANO MARTÍNEZ – Santander/Bordeaux:

Horno Cave (Ramales de la Victoria, Cantabria, Spain): new information about Late Glacial human settlement in the Upper Río Asón Valley

The Upper River Asón Valley, in the east of the province of Cantabria, had already been visited by the pioneers of Cantabrian prehistory. In fact, the caves located at the base of a dramatic vertical limestone cliff on the south-western face of Monte Pando were quoted in *Les Cavernes de la Région Cantabrique* (Alcalde del Río, Breuil and Sierra 1911); one of these caves has been called Horno cave since the 60's. These authors had already indicated the use of some of the caves by humans during the Palaeolithic but only in the 80's and 90's did some publications include a small amount of archaeological information about Horno cave. Research into Palaeolithic rock art was common in this area during the 20th century (major sites such as Covalanas and La Haza are close to the site presented) but we have little information about Upper Palaeolithic settlements. This is one of the reasons why it has been important to develop excavation projects in this area. In this respect M.A. Fano's work in Horno cave complements the research developed by M.R. González Morales and L.G. Straus since 1996 at the main site of this area: El Mirón Cave.

At the moment, a limited excavation (1999, 2000 and 2001 campaigns) has enabled us to survey an uppermost disturbed layer, with handmade prehistoric ceramic sherds and a large number of bone and stone tools which may be attributed to the late Magdalenian and to the Azilian. This uppermost disturbed layer probably originally included late Magdalenian, Azilian and ceramic occupations, though it is not possible to distinguish between different archaeological layers in this part of the deposit, at least where the test pit has been made. Below the uppermost disturbed layer, three sedimentary units have been surveyed: unit 1, composed of compact yellowish silt; unit 2, brown in colour and very rich in archaeological material; unit 3, above the bedrock, made of bright yellow sand, and practically sterile. Layers 1 and 2 have yielded diagnostic late Magdalenian artefacts (such as two fragments of harpoons decorated with geometric engravings) and two statistically identical radiocarbon datings of 12.530 ± 190 BP (GX-27457) and 12.250 ± 190 BP (GX-27456) respectively.

H. ALCALDE DEL RÍO, H. BREUIL & L. SIERRA 1911: *Les Cavernes de la Région Cantabrique*. Monaco, A. Chêne.

L.G. STRAUS, M.R. GONZÁLEZ MORALES, M.A. FANO MARTÍNEZ & M.P. GARCÍA-GELABERT 2002: Last Glacial Human Settlement in Eastern Cantabria (Northern Spain). *Journal of Archaeological Science* 29: 1403-1414.

L.G. STRAUS, M.R. GONZÁLEZ MORALES, M.P. GARCÍA-GELABERT & M.A. FANO MARTÍNEZ 2002: The Late Quaternary Human Uses of a Natural Territory: the case of the Río Asón drainage (Eastern Cantabria province, Spain). *Journal of Iberian Archaeology* 4: 21-61.

Ignacio CASTANEDO – Santander:

The earliest inhabitants of Cantabria: Ancient Palaeolithic settlements of La Garma A (Omoño, Cantabria, Spain)

The poster shows the relevant information obtained from archaeological research in two ancient Palaeolithic layers located at the bottom of the stratigraphy of La Garma A cave.

Explanation of the characteristics of both archaeological layers and description of the remains found are the aim of our exposition.

In both layers a great amount of lithic and faunal remains has been recovered. The current scarce information about these earliest stages of Prehistory in northern Spain explains the relevancy of this settlement. That is the reason La Garma A is a site which represents a point of reference in the study of Ancient Palaeolithic in Cantabrian Region nowadays.

Marián CUETO RAPADO – Barcelona, Cristina GARCÍA-MONCÓ PIÑEIRO – Santander:

La Garma: a unique site, a different methodology. Archaeological study in the Galería Inferior (Lower Gallery), zone IV

This here presented poster sums-up the works performed at the Galería Inferior, a cave inside the archaeological complex of La Garma. Lately, the archaeozoological analysis of the faunal remains from zone IV have been given a significant importance among the researchs carried out in La Garma.

The special conditions this site presents, have made it necessary to develop a specific methodology. We find ourselves at a unique archaeological site because of its conservation conditions, a reality partly because of the difficult access to the gallery, a fact that, on the other side, turns out to be a problem for the archaeologist when planning the archaeological remains' analysis. Not a single remain is removed from the Galería Inferior unless it's imperative, because they are on surface.

In this study, the cave itself turns into a laboratory because of the need to study the exposed materials in situ, being this one of the patterns of the strikingness of the cave. The high density of remains in these superficial layers makes it difficult to access the remains hardly being areas lacking archaeological remains.

In the poster, we will explain both the problems found when facing this study and the methodology finally considered the most appropriate for the case, methodology that involves on one side, the creation of maps that include the exact location on site of each remain and on the other side, the archaeozoological study, direct and in situ analysis of the faunal remains.

Aerial photogrammetry is used for the maps' making, a kind of photography that when combined with the proper computer programs, enables the elaboration of topographic maps in which the surface remains are drawn and located aided by referential coordinates.

As for the archaeozoological analysis, it begins with the location on the map of each fragment of bone, being subsequently morphologically and taxonomically identified, measured and analysed under microscope. Of course, each bone is also photographed on its original position, and if necessary, isolated and in detail. All the data is registered and filed in data bases, so its accessible afterwards. This first stage enables us to compile the data necessary for its latter interpretation.

Giampaolo DALMERI, M. BASSETTI, A. CUSINATO, Klaus KOMPATSCHER, N. HROZNY – Trento:

The ochre-painted stones of the epigravettian site of Riparo Dalmeri (Trento-Northern Italy)

The mobiliary art from Dalmeri Rockshelter demonstrates the importance of this settlement as a relevant centre of the production of figurative art in the Prealps. We have presented 23 ochre-coloured stones, some of which are characterised by a clear naturalistic inspiration, which is new if compared to the existing documentation. Furthermore, during the Final and Recent Epigravettian, the majority of the figurative representations of naturalistic subjects in Italy (rock and mobiliary art) are engraved, but very few of them are painted (as is the case of Dalmeri Rockshelter). In general, most of the figurative expressions of this kind are attributed to the pre-Allerød phases and are approximately contemporaneous to the Franco-spanish rock art. The Dalmeri Rockshelter, which is dated to the Allerød phase, gave us pieces of art which

are considered to be an evident continuation of the naturalistic style expressed during the Late Glacial. The naturalistic representations discovered, with their variety of animal figures, in fact show similarities to the above mentioned Franco-spanish art. The five painted stones, with animal subjects, show a simple but clear pictorial style, that displays, in great details, the forms of the animals.

As well as the naturalistic paintings, the site has also preserved ten schematic representations, that show well-defined and delimited colour zones; and eight stones which only present traces of pigmentation.

The ochre paintings are mostly positioned on the rough and irregular surfaces of the calcareous supports.

The position of these very well conserved stones has an extremely important symbolic meaning, which adds to the importance of the aesthetic value and artistic tradition of these paintings. In fact, these stones were found in a limited area inside the rockshelter and it is clear that they were placed along the eastern edge of the dwelling area, near to the entrance. Only three stones were found inside this dwelling area. It is clear, from the stratigraphic point of view, that the positioning of the stones took place or immediately before or during the first occupation of the dwelling area. Therefore, we can suppose that their position is directly connected to the area reserved for the hut. We must also emphasize the fact that the dwelling structure, having been reused and rebuilt a number of times, has always been in the same position throughout the entire period of its seasonal occupation.

The mobiliary art was carried out on stones, taken from the upper surface of the natural landslide (U.S. 15), on which the epigravettian dwelling structure had been immediately situated. The stones, after painting, were placed upsidedown. In fact, the majority of them (17 examples) had the decorated surface downwards, or directly on the sterile landslide (U.S. 15) or inside of the latter. Three stones have also sort of sign or symbolic/schematic figure on the posterior surface. We can therefore suggest that the ensemble of the painted stones, that were found turned over and so hidden, were part of a complex ritual.

Even though the research at Dalmeri Rockshelter is not yet finished, these latest findings already help us to underline the characteristics of a complex, articulated dwelling site. Particularly, they allow us to open new horizons on the spirituality of the epigravettian hunters, who occupied this site.

At this moment, it would be premature to draw more detailed and interpretive hypothesis from the information available. However, we wish to provide analytical and descriptive data, that will permit future studies on the meaning of this artistic production, found in such a dwelling context.

Diego GÁRATE MAIDAGAN – Santander:

Étude des grottes ornées paléolithiques avec de la peinture de trace ponctué dans la région cantabrique: situation actuelle

On veut montrer une ligne de recherche de l'art paléolithique cantabrique sur une sorte des ensembles ornées avec des caractéristiques très homogènes qui doivent être analysés. Il s'agit des figures animaux, surtout cervidés, peintures en trace rouge ponctué combiné avec trace linéal caractéristiques de cette région.

L'augmentation progressif des ensembles avec ce type des représentation à cause des nouveaux découvertes dans les dernières décades et le développement des nouvelles tendances d'études de cette discipline, ceux sont les facteurs principales qui nous ont conduit à poser-nous un analyse global du groupe des grottes dont on a mis en rapport les différents éléments par qu'elles sont caractérisées. On a considéré la technique de réalisation et la hiérarchie des procédés, la thématique, la sélection des espaces ornées, l'organisation des panneaux, la variabilité stylistique, la chronologie approximative et la distribution géographique. Comme ça, on peut caractériser un ensemble déterminé qu'après sera comparé

avec des autres aussi homogènes pour mieux connaître la variabilité artistique au Paléolithique Supérieur final et son ordre chronologique.

Jesús GONZÁLEZ URQUIJO, Juan José IBÁÑEZ ESTEVEZ, Joseba RIOS GARAIZAR – Santander:

La fin du paléolithique moyen au Cantabrique. Nouvelles fouilles dans le gisement d'Axlór

Le gisement d'Axlór est situé sous un abri rocheux à Dima (Vizcaya, Pays Basque) dans la partie orientale de la région cantabrique, à 320 m sur le niveau de la mer et à quelques 30 km de la côte actuel. Une fouille a été engagée dans le gisement au début des années 70 du dernier siècle par D. J.M. de Barandiarán. Il a mis à la lumière 9 niveaux stratigraphiques parmi lesquels il y a avait plusieurs avec des occupations à la fin du paléolithique moyen.

Les fouilles ont été réouvertes l'année 2000 pour nous fournir renseignements sur les modes de vie des derniers néandertaliens cantabriques. Dans cette optique, les axes de recherche du projet sont assis sur l'étude de l'organisation technique et économique et sur les conditions du milieu pendant la période. Le volet le plus approfondie pour le moment c'est la gestion de l'outillage lithique.

Juan José IBÁÑEZ ESTEVEZ, Jesús GONZALEZ URQUIJO – Santander:

Recherches sur l'organisation économique des chasseurs-cueilleurs à la fin du paléolithique au Pays Basque

L'organisation technique et économique des chasseurs-cueilleurs à la charnière entre la fin du paléolithique et le épipaléolithique a été le sujet de nos recherches pendant les quinze dernières années. La plupart de l'information provient de plusieurs gisements fouillés récemment (Santa catalina, Laminak II, Kukuma, Berniollo, Urratxa III, ...). Les premières conclusions sont issues de l'analyse sur l'outillage de pierre –technologie, fonction ou distribution spatiale- car la plupart des autres études font défaut pour le moment.

Ces résultats dévoilent un changement tout au long de la période. On peut observer une progressive diversification fonctionnelle des sites, avec la croissance du nombre de sites spécialisés dans la chasse, le dépeçage et le tout premier traitement des carcasses animales, pendant l'azilien et l'épipaléolithique. Cette stratégie prend le sens dans le cadre des changements qu'on avait été déjà décrits pour la région dans cette période : la réduction de la mobilité et la diversification des ressources exploitées.

Lourdes MONTES, Manuel MARTÍNEZ BEA – Zaragoza:

Les gravures de la grotte Drólica (Sarsa de Surta, Huesca)

Dans les dernières années, on se vient de faire un intéressant travail archéologique dans la région pre-pyrénéenne d'Huesca, tant dans la prospection autant que dans les feuilles archéologiques, avec des importants résultats (Montes & Domingo 2002).

Dans ce contexte, avec quelques sites comme Cova Alonsé (Estadilla), qui a apporté un matériel lithique avec racloirs nucléiformes et des burins datées dans le Magdalénien Inférieur-Moyen, on rencontre la grotte Drólica.

Cette grotte, avec une salle principale d'importantes dimensions et d'autres ramifications, a une série de gravures dans la zone la plus profonde, des tracés qui rappellent aux connus comme traits digitaux si nombreux dans des autres grottes européennes, dont le contexte chrono-culturel est situé généralement dans le Paléolithique.

Les gravures de Drólica ont une section en « U » et un tracé assez large en formant une série des lignes gravées plus ou moins parallèles et aussi régulièrement onduleux, bien qu'on ne puisse pas identifier aucun élément reconnaissable. Pourtant, la localisation des gravures (dans le toit et dans une zone très concrète de la grotte), de même que le tracé curviligne de quelques de ces lignes fait possible pour nous de voir une origine anthropique pour elles, bien

qu'on ne puisse pas écarter l'existence de quelques tracés d'ours lesquels puissent avoir été la motivation des tracés humains.

La découverte de ce type de gravures dans cette région, est d'une grande importance parce qu'il n'est pas une découverte isolée. Dans la grotte d'El Forcón (Casado 1983) nous rencontrons une série de tracés digitaux, aussi indéterminés, et qui nous servent comme des parallèles pour ce que nous les présentons ici.

La chronologie pour ce type de représentations est généralement trop incertaine, et bien qu'il soit dans la pensée de la plus part des préhistoriens qu'ils sont paléolithiques, il y en a aussi dans des époques plus récentes, comme dans la grotte de Kaite (Ojo Guareña, Burgos) qui sont datés dans l'âge de Bronze. Pourtant, il y a une série de sites paléolithiques comme Cova Alonsé ou Fuente del Trucho, qui sont l'épreuve de la présence des gens de cette époque dans la région.

Malgré l'existence des traits indéterminés dans un grand numéro de grottes (Altamira, Chimeneas, Chufin, Cudón, Rouffignac, Pech-Merle, Aldène, Fontanet, Ker du Massat, Niaux, Cosquer, Gargas...), on ne peut pas trouver trop de publications sur ce sujet (Barrière 1993, Lorblanchet 1993), et dans la plus part des cases on fait seulement des brefs références aux mêmes dans les monographies des grottes en particulier (Alcalde del Río et al. 1911, Breuil & Obermaier 1935, Barrière 1982, Clottes et al. 1992, Clottes & Courtin 1994), ou dans les synthèses générales sur l'art pariétal préhistorique et sur son origine (Breuil 1952, Zervos 1959, Leroi-Gourhan 1965, Brezillon 1984, Chollot-Varagnac 1980, Freeman 1987, Lorblanchet 1995, 1999, Lewis-Williams 1997).

Nous considérons nécessaire une étude plus en profondeur des gravures de la grotte Drólica, et il serait donc d'importance une campagne de travail pour réaliser des travaux de relevé et une feuille archéologique dans la grotte pour documenter l'occupation humaine de la même.

Ricarda MÜSSIG – Karlsruhe:

On some enigmatic signs: Why claviform signs represent women, and aviform signs could represent the souls of killed men

I suggest to qualify these signs as human shapes, confined to certain areas, phases and symbol meanings. Why in Franco-Cantabrian parietal art are humans depicted so rarely, so strongly stylized, and so frequently without a head (cf. Valcamonica)? And: Can we qualify this abstraction as a precondition for the future development of script?

Christine NEUGEBAUER-MARESCH – Wien:

New Field Researches in the Central Loess Region in Lower Austria

Among the large number of Palaeolithic sites in Austria most are situated in the loess regions of Lower Austria, representing the Upper Palaeolithic occupation. Their discoveries date back into the 19th and early 20th century. Though rich collections of artefacts and palaeontological remains came down to us, the documentation of these early excavations is very poor.

A new era of investigations started in the eighties of the 20th century: excavations at Stratzing (open air site of the Aurignacien, done by the autor between 1985-2000) and the field work of Kammern-Grubgraben (open air site 18.000 BP, done by F. Brandtner and A. Montet-White 1985-1994).

In 1998 the Prehistoric Commission of the Austrian Academy of Sciences decided to focus their activities on the Palaeolithic Age and to improve its status in the Prehistoric research. A project titled "Palaeolithic industries before the maximum of the last glaciation, between 32.000 and 20.000 BP under archeological and palaeoecological aspects" has been granted by the Austrian Science Foundation (2000-2003). Main aspect of the project is the characterisation of the transition between the Aurignacian and Gravettian industries in a

multifaceted cooperation between geosciences, palaeontology and archaeology. It includes both the critical review of selected well-known sites in a modern point of view and the reconstruction of the palaeorelief as well as surveys to discover new sites.

In 1999 at the well-known open air site Krems-Hundssteig – published by Hugo Obermaier – a large building project was planned to be realized, 250 m² have been investigated. Though a massive main cultural layer was found at the expected level near the road surface, AMS-dating revealed an age of about 28.000, not the expected age of 35.000 BP.

The excavations (2000-2002) have been providing more detailed evidence for a splitted cultural layer: an upper one, dominated by bones and only rare stone implements and a lower one with four fire places and concentrations of chipped flint tools, belonging to two different levels. The flint industry displays typical elements of the Gravettian (especially a denticulated blade and diverse microlithic, sometimes retouched bladelets and scrapers). Special encrusted features in the loess were diverse well-structured lime marks. Analysed by SEM (Scanning Electron Microscopy) and light microscopy, clear evidence for conifer cells could be identified. Those marks belonged as well to artefacts, to prepared wooden peaces as to the roots of trees.

Today it is obvious, that the old findings of Krems-Hundssteig cannot belong to the only one aurignacien level published by Hugo Obermaier. The slope of the Wachtberg of Krems (containing the site of Krems-Wachtberg, discovered 1930, as well as the site of Krems-Hundssteig) was settled several times since 35.000, but it attained special meaning on reason of his excellent situation between 29-27.000 BP.

Andreas PASTOORS, Gerd-C. WENIGER – Mettmann:

Die Sammlung Wendel. Ein Bildarchiv zur franko-kantabrischen Höhlenkunst im Neanderthal Museum (Mettmann)

Heinrich Wendel war von 1964 bis zu seinem Tod 1980 Ausstattungsleiter der Deutschen Oper am Rhein in Düsseldorf und einer der renommiertesten Bühnenbilder Deutschlands. Die Gestaltung von Räumen durch Licht- und Projektionskunst war ein zentraler Teil seiner künstlerischen Arbeit. Vor diesem Hintergrund führte er zwischen 1964 und 1970 mehrfach Reisen in den franko-kantabrischen Raum durch mit dem Ziel, Inspirationen für seine Arbeit in der prähistorischen Höhlenkunst zu finden. Dabei ging er hochprofessionell sowie mit wissenschaftlicher Akribie nach einem einheitlichen Konzept vor und fotografierte auch in den nicht-öffentlichen Bereichen der Höhlen. So entstand im Laufe der Zeit ein umfangreiches Fotoarchiv von etwa 3000 Bildern. In diesem Fotoarchiv wird nicht nur der Stand der Erhaltung der Höhlenkunst aus rund 50 Höhlen dokumentiert, sondern auch Höhlenkunst aus der Perspektive des Bühnenbildners gesehen: Höhlenkunst als inszenatorisches Mittel einen natürlichen Raum in Architektur, eine Bühne, zu verwandeln. Über 20 Jahre nach dem Tod von Heinrich Wendel wurde nun dieses Fotoarchiv dem Neanderthal Museum zur wissenschaftlichen Bearbeitung und Konservierung anvertraut.

Klaus SCHMUDE – Essen:

Artefacts, geofacts and the Grey Zone in fluvial terraces

Occasionally pebbles from old, higher fluvial terraces are presented as artefacts and very old documents of human presence. Such pieces belong frequently to the grey zone of damages, of which artificial or natural origin is uncertain. Up to now the evaluation has only taken place considering criteria for artefacts. Over the last 10 years I have studied numerous sites with pebble-accumulations of rivers, lake- und sea-beaches, also moraines and the natural damages of the pebbles. I arrived at certain conclusions and attempted to establish methods to clarify the situation.

· On pebble-accumulations it is possible to recognize a pattern of damages of the rocks present and to establish a graphic representation, a “tree of damages”. This tree is built upon

the principle of derivation. The content of this method is built upon Pattern Recognition, a method from informatics.

- Trying to find possibilities to handle groups of objects with uncertain, overlapping limits I made use of certain groups from unsharp logic, Fuzzy Logic, but also as used in sedimentology.

- From informatics I took over the exact use of the terms “possibility” and “probability” and their evaluation/estimation with figures between 0.0 and 1.0.

- Endeavouring to use the systematical methods from informatics I developed a decision-support-system with assistance of the University of Dortmund. This system should however be considered as training, as a course. After having passed through it, one can use an abbreviated, refined model, the “degree of complexity”.

The importance of these systems is their capability to direct your view on the critical points. In a number of cases I found, while proceeding step by step and being forced to attach negative or positive figures, that I had overlooked certain weaknesses, which then made the picture, existing in my mind, turn into the negative in accordance with the principle: “the weakest link decides over the strength of the chain”.

Christian ZÜCHNER – Erlangen:

Magdalenian Mythology

Alexander Marshack analyses in his famous book: „The Roots of Civilization“ (New York 1970) some pieces of *art mobilier* which combine animals and plants of different habitats on small bone surfaces. They are intended in fact as real compositions. Marshack argues that the different elements come together only at a given time: during the spring or early summer when the life starts again after the winter period. He considers these elements as “time factored”, i.e. they imply a calendar message. His very stimulating ideas in prehistoric research did not cause the resonance they deserved. They are not necessarily correct in detail, but they point out clearly that the pictures of animals, plants symbolize ideas which go far beyond the real, visible world – in the same way as do the dove, sheep, snake, lion etc. in modern mythologies. These few, singular pieces of *art mobilier* allow an insight into the meaning of Palaeolithic art, nevertheless they are statistically irrelevant. Hunting or fertility magic, shamanism, Leroi-Gourhan’s theories etc. result as one-dimensional interpretations far away from the complex thinking of Magdalenian people. We may assume that the portable art and the rock art of the Magdalenian are as well inseparable parts of complex system of myths and religions as in later cultures. The study of these few “atypical” objects allow a much better insight into the meaning of cave art than statistical and theoretical studies, which do not include *art mobilier* into consideration.