

Hugo Obermaier-Gesellschaft

für Erforschung des Eiszeitalters und der Steinzeit e.V.



49th Annual Meeting in Trento

10th–14th of April, 2007

Hugo Obermaier Society

for Quaternary Research and Archaeology of the Stone Age



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in cooperation with the
Museo Tridentino di Scienze Naturali Trento (Italien).

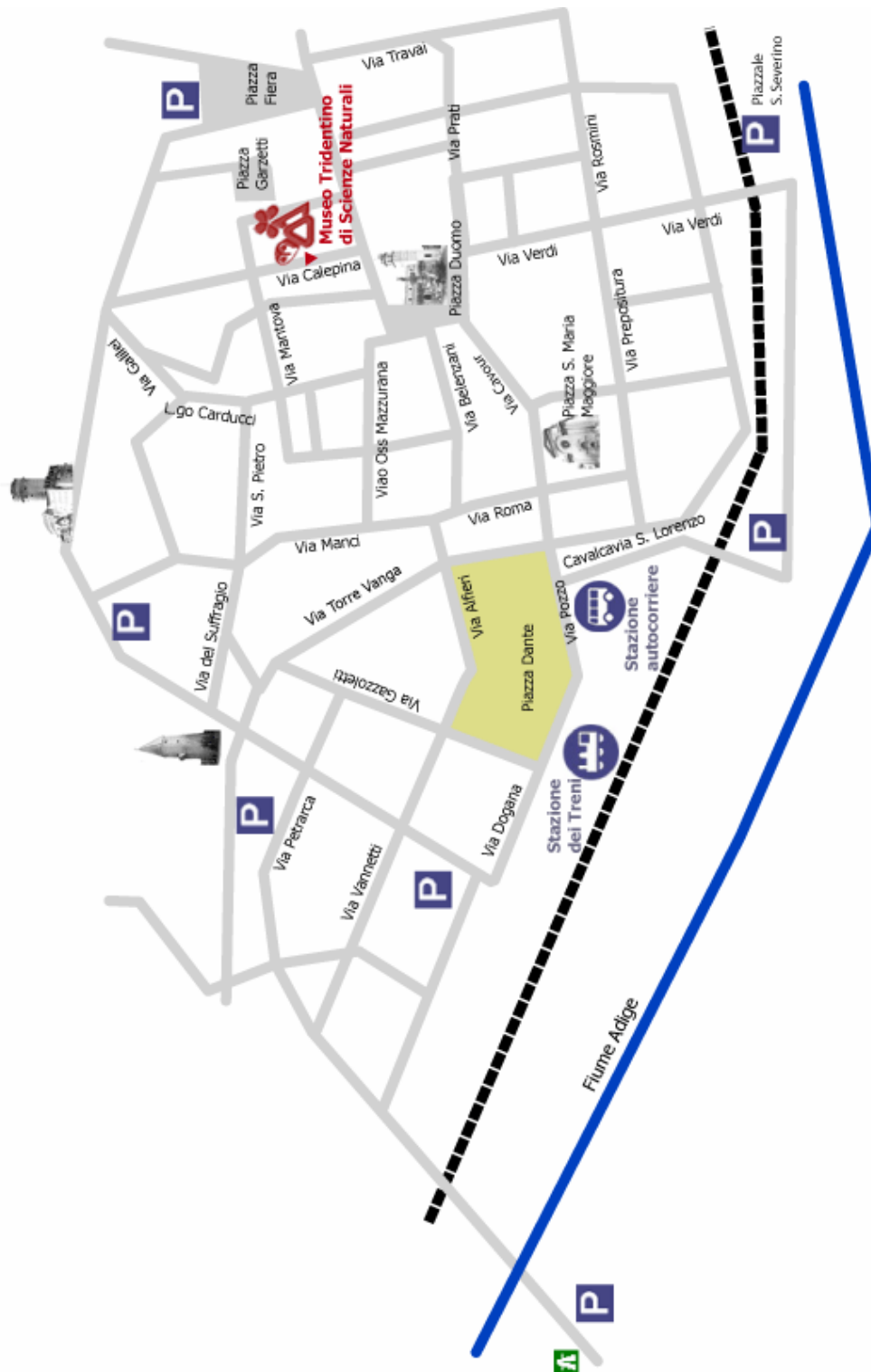
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Hugo Obermaier – Gesellschaft
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Alle Informationen zur Gesellschaft, den Publikationen, zu früheren Tagungen und zur Tagung in Trento 2007 (Programm, Anmeldung, Lageplan, Hotelbuchungen etc.) finden Sie auch im Internet, unter: http://www.uf.uni-erlangen.de/obermaier/obermaier.html



Veranstaltungsort (*Place of the congress*): *Museo Tridentino di Scienze Naturali*
Palazzo Sarda - Via Calepina 14, Trento
<http://www.mtsn.tn.it/museo/default.asp>

Programmübersicht (*Brief programme*)

Montag, 09.04.07 – Monday, April 9th

Vorexkursion in die Felsbildparks der Bronze- und Eisenzeit im Valcamonica bei Capodiponte. Besuch des Felsbildparks von Naquane (UNESCO-Weltkulturerbe), anschließend führt Herr Dr. Züchner durch weniger bekannte Felsbildgebiete der näheren Umgebung.
(*Pre-excursion to the famous rock art of the Valcamonica near Capodiponte. Visit to the UNESCO World Heritage park of Naquane and other less well-known rock art locations in the region, with an introduction by Dr. Christian Züchner, University of Erlangen-Nürnberg.*)

→ Führung und Organisation (*Organiser*): Dr. Christian Züchner (Univ. Erlangen)

08.00 Uhr Treffpunkt/ Abfahrt des Busses am **PIAZZA DANTE** in Trento, direkt gegenüber vom Bahnhof.

(*Departure of the bus from the **PIAZZA DANTE** in Trento, directly opposite the station.*)

10.30 Uhr Treffpunkt für Individualreisende: Eingang des Felsbildpark Naquane. (*Meeting point at the entrance of the Naquane park.*)

bis spätest. 20.00 Uhr Rückkehr des Busses nach Trento.
(*Arrival of the bus in Trento at latest 20:00*)

Dienstag, 10.04.07 – Tuesday, April 10th

11.30 Uhr **Mitgliederversammlung der HOG**
(*Members Meeting of the Hugo Obermaier Society (members only)*)

12.00 – 14.00 Uhr Öffnung des Tagungsbüros (*Registration*)

14.00 Uhr Grußwort des Direktors des Museo Tridentino Dr. Michele Lanzinger; Eröffnung der Tagung durch Präsident Prof. Dr. Ludwig Reisch
(*Opening by Dr. Michele Lanzinger, Head of the Museo Tridentino di Scienze Naturali and by the President of the Hugo Obermaier Society, Prof. Dr. Ludwig Reisch*)

14.20 – 18.00 Uhr Vorträge Alt- und Mittelpaläolithikum
(*Session on Lower and Middle Palaeolithic*)

19.30 Uhr **Empfang (*Reception*) im Museo Tridentino di Scienze Naturali**
Eröffnung der Posterausstellung (*Opening of the Poster presentations*)
und Einführung in die Sonderausstellung (*Introduction to the exhibition*):
“La scimmia nuda - storia naturale dell’umanità”.

Mittwoch, 11.04.07 – Wednesday, April 11th

- 08.30 – 13.00 Uhr Vorträge zum Jungpaläolithikum (*Session on the Upper Palaeolithic*)
- 14.00 – 18.30 Uhr **Exkursion I: Besuch der Ausstellung im Archäologiemuseum Bozen** (*Archaeological Museum Bolzano*)
(incl. Similaun-Gletschermumie)
→ **Anreise per S-Bahn** (*transfer by train*)
- ab 20.00 Uhr gemeinsames Abendessen im Zentrum von Trento
(*Conference dinner in the centre of Trento*):
Pizzeria PEDAVENA, Via S. Croce 15, 38100 Trento

Donnerstag, 12.04.07 – Thursday, April 12th

- 08.30 – 12.30 Uhr Vorträge zum Jung- und Spätpaläolithikum
(*Session on Upper and Late Palaeolithic*)

(*Mittagspause/ lunch 12.30 – 14.00 Uhr*)
- 14.00 – 18.15 Uhr Vorträge zum Spätpaläolithikum, Mesolithikum und frühen Neolithikum (*Session on Late Palaeolithic, Mesolithic and Early Neolithic*)
- 20.00 Uhr **Öffentlicher Vortrag** (*Public lecture*),
Prof. Marco Peresani (Ferrara):
Neandertals and modern humans in the Italian Alps: a history of 300,000 years of adaptation.

Freitag, 13.04.07 – Friday, April 13th

- Exkursion II: Grotta di Fumane und Riparo Tagliente (bei Verona)** (8.30 – 18.00 Uhr)
(<http://www.rcvr.org/cittaepr/grezzana/itinerari/ititagl.htm>)
- Führung** (*presentation*) **Grotta di Fumane:** Prof. A. Broglio, Prof. M. Peresani, Dr. M. De Stefani, Dr. F. Gurioli, Dr. S. Bertola, Dr. S. Ziggiotti.
- Führung** (*presentation*) **Riparo Tagliente:** Dr. M. Arzarello, Dr. F. Fontana, Prof. A. Guerreschi, Prof. C. Peretto & Dr. U. Thun Hohenstein.

Samstag, 14.04.07 – Saturday, April 14th

- Exkursion III: Museo delle Palafitte di Ledro und Museo Civico di Riva del Garda** (8.30 – 18.00 Uhr)
(<http://www.palafitteledro.it/>)
- Führung** (*presentation*) **Riva:** Soprintendenza di Trento (Archäol. Denkmalpflege Trento).
- Führung** (*presentation*) **Museo delle Palafitte di Ledro:** Dott.ssa Romana Scandolari.

Programm (*programme*)

Tuesday, April 10th

- 11:30 **Members Meeting of the Hugo Obermaier Society**
- 12:00 – 14:00 **Registration**
- 14:00 **Opening of the congress**
by Dr. Michele Lanzinger, Head of the *Museo Tridentino di Scienze Naturali*
and by the President of the Society, Prof. Dr. Ludwig Reisch.
- 14:20 – 18:00 **Session on Lower and Middle Palaeolithic**
- 14:20 – 14:45 *Miriam Haidle (Tübingen):*
How to think a simple spear?
- 14:45 – 15:10 *Carlo Peretto, Ursula Thun Hobenstein & Marta Arzarello (all Ferrara):*
The Mousterian sequence of Riparo Tagliente: techno-economical behaviours
and subsistence strategies.
- 15:10 – 15:35 *Laura Longo (Siena) & Paolo Giunti (Livorno):*
Techno-economical choices and mobility strategies during Middle Palaeo-
lithic in the Lessini Mountains (Northern Italy).
- 15:35 – 16:00 *Thorsten Uthmeier (Köln):*
Foragers or Collectors? Neanderthal subsistence tactics in the Crimean Mico-
quian.

- *coffee break* -

- 16:30 – 16:55 *Nicholas J. Conard (Tübingen):*
The transition from Middle to Upper Paleolithic in Swabia and the reasons
why Neanderthals went extinct.
- 16:55 – 17:20 *Olaf Jöris (Neuwied) & Bernhard Weninger (Köln):*
The Final Frontier of Radiocarbon Dating and the Middle to Upper Palaeo-
lithic Boundary.
- 17:20 – 17:55 *Philip R. Nigst (Leipzig):*
Willendorf II and the Middle to Upper Palaeolithic transition in Central
Europe: A first note on the 2006 field work (Hugo Obermaier Prize 2006).
- 17:55 – 18:00 Discussion.
- 19:30 **Official Reception in the *Museo Tridentino di Scienze Naturali***
- Opening of the Poster presentations.
- Introduction to the exhibition:
 “La scimmia nuda - storia naturale dell’umanità”.

Wednesday, April 11th

8:30 – 12:30 Session on the Upper Palaeolithic

- 8:30 – 8:55 *Philipp Woerx (Tübingen):*
The Aurignacian of the Grotte du Figuier (Ardèche, France) in its archaeological context.
- 8:55 – 9:20 *Leif Stegumweit (Erlangen), Mircea Anghelincu (Targoviste, RO) & Ulrich Hambach (Bayreuth):*
Long Upper Palaeolithic sequences in Romania – Recent results from the Sites of Poiana Ciresului, Bistricioara-Lutarie and Ceahlau-Dartsu (Bistrita valley, NE-Romania).
- 9:20 – 9:45 *Susanne C. Münzel & Nicholas J. Conard (both Tübingen):*
Personal ornaments from the Upper Palaeolithic of the Swabian Jura: Their archaeological context and meaning."
- 9:45 – 10:10 *Jordi Serangeli & Michael Bolus (both Tübingen):*
Europe during the Last Glaciation: Differences in Perception North and South of the Alps.

- coffee break -

- 10:40 – 11:05 *Luc Moreau (Tübingen):*
Geißenklösterle. The Swabian Gravettian in a European Context.
- 11:05 – 11:30 *Christine Neugebauer & Thomas Einwögerer (both Vienna):*
Another infant burial from the Upper Paleolithic site Krems-Wachtberg, Lower Austria.
- 11:30 – 11:55 *Walpurga Antl (Vienna):*
New research concerning the Venus from Willendorf.
- 11:55 – 12:20 *Laure Fontana (Aix-en-Provence, FR):*
Reindeer exploitation during the French Upper Palaeolithic: new hypothesis.
- 12:20 – 13:00 *Elham Ghasidian, Saman Heydari & Nicholas J. Conard (all Tübingen):*
Current research on the Upper and Epipaleolithic of Iran.
- Felix Hillgruber, Knut Bretzke & Nicholas J. Conard (all Tübingen):*
Technological Change and Continuity in Upper and Epipaleolithic of Western Syria.

- lunch break -

14:00 – 18:30 Excursion I: Archaeological Museum Bozen

- from 20:00 **Conference dinner in the centre of Trento:**
Pizzeria PEDAVENA, Via S. Croce 15, 38100 Trento.

Thursday, April 12th

8:30 – 12:30 **Session on Upper and Late Palaeolithic**

- 8:30 – 9:10 *Martina Sensburg (Neuwied):*
Gönnersdorf & Andernach: Re-evaluating Magdalenian intrasite spatial organisation and landuse patterns in the German Central Rhineland.
- Martin Street (Neuwied):*
Late Palaeolithic settlement systems in the Central Rhineland.
- 9:10 – 9:35 *Michele Bassetti & Diego E. Angelucci (both Trento):*
The landscape evolution of the Adige region from the Alpine Last Glacial Maximum to mid-Holocene times.
- 9:35 – 10:00 *Silvia Frisia, Andrea Borsato, Maria-Letizia Filippi (all Trento), Enrico Arpentini (Milano) & Oliver Heiri (Utrecht):*
Late Glacial Palaeoclimate evolution (Evoluzione Paleoclimatica nel Tardo Glaciale).
- 10:00 – 10:25 *Ivana Fiore & Antonio Tagliacozzo (Roma):*
Strategie di caccia durante il Paleolitico superiore nelle Prealpi orientali.

- coffee break -

- 10:50 – 11:15 *Federica Fontana, Antonio Guerreschi, Mana Gionanna Cremona, Fabio Gurioli, Carolina Veronese (all Ferrara), Cristina Cilli, Antonio Rocci Ris (both Torino) & Jeremie Liagre (Chartres, FR):*
Recent data on the Late Epigravettian occupation at Riparo Tagliente, Monti Lessini (Grezzana, Verona): an interdisciplinary perspective.
- 11:15 – 11:40 *Giampaolo Dalmeri, Michele Bassetti, Anna Cusinato (all Trento), Klaus Kompatscher & Maria Hrožny Kompatscher (Bolzano):*
La produzione artistica del sito epigravettiano di Riparo Dalmeri (Italia nord-orientale) = *The Epigravettian artistic production of the Dalmeri Rockshelter, NE-Italy.*
- 11:40 – 12:05 *Stefan Veil (Hannover), Klaus Breest (Berlin) & Pieter Grootes (Kiel):*
¹⁴C-dating the spatial structure with amber elk and pendant at the Feder-messer site Weitsche, Lower Saxony (Germany).
- 12:05 – 12:30 *Birgit Gehlen (Kerpen-Loogh):*
Living under a rock shelter during the Alleröd period – The reconstruction of human behaviour by spatial distribution of original workpieces and refitting sequences.

- lunch break -

14:00 – 18:15 **Session on Late Palaeolithic, Mesolithic and Early Neolithic**

- 14:00 – 14:25 *Preston T. Miracle (Cambridge) & Darko Komso (Istria):*
The Late Upper Palaeolithic and Mesolithic of the Northern Adriatic Region.
- 14:25 – 14:50 *Giampaolo Dalmeri, Michele Bassetti, Anna Cusinato (all Trento), Klaus Kompatscher & Maria Hrožny Kompatscher (Bolzano), Ursula Wierer (Siena):*
Updating on the Final Palaeolithic-Mesolithic transition in Trentino (NE Italy).
- 14:50 – 15:15 *Stefano Grimaldi (Trento):*
Thoughts on the Early Mesolithic adaptive strategies in Northeastern Italy.
- 15:15 – 15:40 *Sven Feldmann (York):*
Do we interpret what we dig? Thoughts on the history of the German Mesolithic research.

- *coffee break* -

- 16:10 – 16:35 *Claus-Joachim Kind (Esslingen):*
Hazelnuts and Beaver Steaks – The Mesolithic in Southwest Germany.
- 16:35 – 17:00 *Marta Bazzanella (Trento), Mauro Coltorti, Pierluigi Pieruccini, Ursula Wierer (all Siena):*
The Galgenbühel/ Dos de la Forca Mesolithic site and its environmental context (Adige Valley, South Tyrol, Italy).
- 17:00 – 17:25 *Jacek Kabacinski (Poznan, PL) & Thomas Terberger (Greifswald):*
The early pottery in the Baltic – new results.
- 17:25 – 17:50 *Elisabetta Mottes (Trento):*
New data on the absolute chronology of the Neolithic of the Adige Valley in Trentino. = *Nuovi dati sul Neolitico antico in Trentino.*
- 17:50 – 18:15 *Annaluisa Pedrotti (Trento):*
The Central Alps human population during the rise of agriculture.
= *Il popolamento delle Alpi centro orientali alla comparsa dell'agricoltura.*

20:00 **Public lecture by Prof. Marco Peresani (Ferrara):**

Neandertals and modern humans in the Italian Alps: a history of 300,000 years of adaptation.

***Poster presentations in the entrance hall
(Tuesday 10th – Thursday 12th of April):***

Nicholas Barton (Oxford), Abdeljalil Bouzouggar (Rabat), Simon Collcutt (Oxford), Tom Higham (Oxford), Louise Humphrey (London), Edward Rhodes (Canberra), Jean-Luc Schwenninger (Oxford) & Elaine Turner (Neuwied):

Results of new investigations of the Middle and Upper Palaeolithic occupation of Grotte des Pigeons, Taforalt (Morocco).

Stefano Bertola, Alberto Broglio, Mirco De Stefani, Fabio Gurioli (all Ferrara), Antonio Tagliacozzo (Roma):

Landscape exploitation at the beginning of Upper Palaeolithic: the example of Broion Shelter (Berici Hills, Vicenza).

Knut Bretzke, Felix Hillgruber, Nicholas J. Conard (all Tübingen):

Land Use and Climatic Change in the Middle and Late Pleistocene of Western Syria.

Doris Döppes (Darmstadt) & Wilfried Rosendahl (Mannheim):

Numerically dated palaeontological cave sites of Central Europe from Late Middle Pleistocene to Early Upper Pleistocene – a critical review

Sven Feldmann (York):

Mesolithic Miscellany - Building an information-platform.

Daniela Festi (Innsbruck/ Trento), Maria Letizia Filippi, Giampaolo Dalmeri (beide Trento), Klaus Oeggel (Innsbruck):

Palaeo-ecological studies of the Palù Echen mire (Folgaria, NE Italy): preliminary results.

Maria Letizia Filippi, Silvia Frisia, Nicola Angeli (all Trento), Enrico Arpentini (Milano), Oliver Heiri, Klaas van der Borg (both Utrecht), Simon Blockley (Oxford):

Lake Lavarone Late-glacial to present palaeoenvironmental changes: a unique multi-proxy record from Trentino, NE Italy.

Sabine Gaudzinski-Windheuser, Lutz Kindler (both Neuwied), Rivka Rabinovich & Naama Goren-Inbar (both Jerusalem):

The Role of Hominin and Natural Agents in the Formation of Striations and Cut-marks on Bones at the Acheulian site of Gesher Benot Ya'akov, Israel.

Ulrich Hambach (Bayreuth), Leif Stegmann (Erlangen) & Mircea Anghelina (Targoviste, RO):

Inter-profile correlation of Upper Palaeolithic archaeology bearing loess sequences from the East Carpathians (Romania) – Results from ongoing rock and palaeomagnetic investigations.

Saman Heydari (Tübingen):

What impact did geomorphological factors have on early human dispersal in Iranian Plateau?

Inga Kretschmer (Köln):

Hunting and raw material Procurement Among late Neanderthals IN Crimea (Ukraine): Kabazi II, Unit II, Level 7AB.

Anna Lunardi (Siena):

Grinding Stones and polished stone axes: Experimental research in the Adige Valley.

Hannes Napierala (Tübingen):

New results on the Magdalenian fauna of Kesslerloch Cave, Switzerland.

Martina Pacher & Markus Fiebig (both Vienna):

Late Pleistocene Human Occupation and Ice Development in the Eastern Alps.

Marco Peresani (Ferrara):

Flint, caches and the circulation of implements among the hunter-gatherers of North-Eastern Italy.

Marco Peresani, Rossella Duches, Fabio Gurioli & Matteo Romandini (all Ferrara):

The Clusantin Cave and the specialised hunting and processing of marmots during the Epigravettian in Italy.

Marco Peresani (Ferrara), Mara Silvestrini (Ancona), Emanuele Cancellieri (Ferrara):

The peopling of the Marche Appennine during the Late-Glacial.

Marco Peresani (Ferrara), Riccardo Miolo & Giampaolo Dalmeri (Trento):

Skill among the climbers of the Alps: an assessment of micro-burin technology as a tool for reconstructing social behaviours.

Marco Peresani (Ferrara) & Pietro Frizzo (Padua):

An haematite slab from Central Europe found at the Epigravettian site of Bus de La Lum (Venetian Pre-Alps).

Daniel Richter (Leipzig):

A new Thermoluminescence technique for dating small heated flint artefacts.

Arguitxu de la Riva-Caballero & Torstein Solhøy (both Bergen, N):

Archaeological excavation at Kvitevoll, Halsnøy Island, Western Norway, 2004. Results from the mite analysis.

Thomas Weber (Magdeburg):

The Lower / Middle Palaeolithic Transition – is there a Lower / Middle Palaeolithic Transition?

Kurzfassungen der Vorträge (*Abstracts of reports*)

Walpurga Antl (Wien):

New research concerning the Venus from Willendorf (Lower Austria)

On the occasion of the 100th anniversary of the finding of the Venus from Willendorf in 2008 a revision of all facts concerning the figurine as for instance historical facts, stratigraphy and production was planned. This contribution will refer to the role of Obermaier during the excavation of 1908 putting his responsibility in its true light. The main part focuses on the stratigraphic position of the find and the comparison of the original documents drawn by Szombathy, Obermaier and Bayer which hadn't been published so far. The topic number two will deal with the production of the figurine, especially the working traces never presented in detail before. Apart from the Venus I from Willendorf there will be added a short comment on the Venus II and the so called Venus III as well as their stratigraphical context in comparison to the Venus I.

Marta Bazzanella (Trento), Mauro Coltorti, Pierluigi Pieruccini, Ursula Wierer (all Siena):

The Galgenbühel/ Dos de la Forca Mesolithic site and its environmental context (Adige Valley, South Tyrol, Italy).

The Galgenbühel / Dos de la Forca site, excavated by the Ufficio Beni Archeologici della Soprintendenza ai Beni Culturali della Provincia di Bolzano-Alto Adige between 1999 and 2002, has been studied from a geomorphological, stratigraphic, sedimentological, micromorphological and paleontological point of view. The ca. 2,5 m thick sequence allows a reconstruction of the local paleoenvironment during the beginning of the Holocene.

The 14C datings show that the human frequentation took place between the mid of the 9th and the mid of the 8th millennium cal. BC (between 9.265 $\pm$ 70 and 8.560 $\pm$ 65 years BP n.c.). Typo-technological analysis of the flint industry indicates that the entire series can be ascribed to the Early Mesolithic Sauveterrian culture.

The site is located below a narrow rockshelter, at the top of a debris fan belonging to a talus covering the foot of the vertical cliff that delimits the left side of the Adige Valley. This talus originated after the glacier retreat at the end of the Last Glaciation. The valley bottom, that was previously affected by a deep under scouring, was firstly transformed into a lake and later filled with alluvial deposits coming from the tributaries and by thick debris produced by the deglaciated slope. The aggradation of the debris fan occurred by repeated debris and rock falls. Very coarse grained levels rich in boulders are predominant in the site, but very thin and finer-grained sandy layers are also present. They are interbedded with the anthropic layers. The excavation, jointly with micromorphological investigations, revealed the presence of in situ fireplaces with recurring sequences of burnt sediments, ash, charcoal and thin layers with abundant animal bones; levels of secondary dump are also present, usually chaotic and structureless. The osteological remains of large mammals and fish fauna indicate, besides hunting activity, an intense exploitation of the nearby wetland by the Mesolithic hunter-gatherers.

Michele Bassetti & Diego E. Angelucci (both Trento):

The landscape evolution of the Adige region from the Alpine Last Glacial Maximum to mid-Holocene times.

In this paper we will present an overview of the landscape evolution of the Adige region and its surroundings from the ALGM (Alpine Last Glacial Maximum) to the end of the mid Holocene, e.g. approximately between 20 000 and 5000 ¹⁴C BP.

Since the 1970's the excavation and multidisciplinary study of Late Upper Palaeolithic, Mesolithic and Neolithic sites have allowed archaeologists to gather abundant (but unevenly distributed in space and time) data on the stratigraphy, soil science, geomorphology and Quaternary geology of the region. Further data derive from the analysis of the sites' archaeology, archaeobotany and archaeozoology. The available information is resumed here to outline the palaeogeography, palaeoclimate and palaeoenvironment of the southern Alpine region and to understand the relationships between these factors and the settlement systems of the last hunter-gatherers and first shepherds and farmers who inhabited the area.

Data presentation will follow a chronological approach and try to emphasize the transitional moments / events, *i.e.*: the retreat of the southern Alpine Pleistocene glaciers; the contrasting environmental conditions of the lateglacial, with the temperate scenario of the GI-1 (Greenland Interstadial 1, *a.k.a.* Bølling and Allerød), driving the human settlement towards the Prealpine margin and *plateaux*, and the cold pulsation of the GS-1 (Greenland Stadial 1, *a.k.a.* Younger Dryas); the onset of the temperate Holocene situation from Preboreal and Boreal times, when the Mesolithic groups moved up to the main Alpine range; the biostatic phase during the Atlantic, corresponding to the settlement of the first Neolithic groups, and its end, perhaps partly related to human impact.

Nicholas J. Conard (Tübingen):

The transition from Middle to Upper Paleolithic in Swabia and the reasons why Neanderthals went extinct.

Contrary to earlier expectations, recent excavations at Geißenklösterle and Hohle Fels in the Swabian Jura have produced no evidence for contact between Neanderthals and modern humans or for a gradual transition between the Middle and the Upper Paleolithic. The Upper Paleolithic begins with the appearance of the early Aurignacian, which contains many new kinds of artifacts that are unknown in Middle Paleolithic assemblages. Late Middle Paleolithic and early Aurignacian deposits are always separated by strata lacking artifacts.

A comparison of Middle Paleolithic and Aurignacian find horizons provides important evidence for explaining why modern humans displaced Neanderthals and ultimately drove them to extinction. Aurignacian assemblages typically have roughly ten times more occupational debris per unit time or sediment volume than Middle Paleolithic deposits. A high occupation intensity during the Aurignacian points to higher levels of population density than during the Middle Paleolithic. The new technologies and artifacts containing symbolic meaning help to explain how modern humans achieved and sustained higher population densities than those characteristic of the “low impact” adaptations of Neanderthals. This paper presents the Swabian data for this transition and will consider whether the Swabian model can help explain why Neanderthal went extinct with little genetic contribution to our own species.

Giampaolo Dalmeri, Michele Bassetti, Anna Cusinato (all Trento), Klaus Kompatscher & Maria Hrozný Kompatscher (Bolzano):

La produzione artistica del sito epigravettiano di Riparo Dalmeri (Italia nord-orientale) = *The Epigravettian artistic production of the Dalmeri Rockshelter, NE-Italy.*

The Dalmeri Rockshelter, on the Sette Comuni plateau (Trento Province, Northern Italy), offers a rare opportunity to examine Late Glacial mobiliary art production in a well-preserved context. At the present, the site is located in a small valley facing North-East at 1240 a.s.l. The landscape around the shelter is dominated by a wide karst plateau, dissected by valleys. The palaeoenvironment, during the Late Glacial, has been reconstructed as an open alpine prairie on the top of the plateau surrounded by lower level conifer forests.

Systematic excavations brought to light a sequence of anthropic levels with Recent Epigravettian remains, which were radiocarbon dated to the Late-Glacial Interstadial. The anthropic layers can be subdivided in two chronological phases. The first, which represents the earliest human occupation, is strictly associated with the presence and the arrangement of about 220 painted stones. The second is defined by the overlying dwelling floors, which conserved evidence of a hut and several hearths.

The red ochre naturalistic silhouettes from the Dalmeri Rockshelter were painted on oolitic grainstone taken from the Jurassic host rock. Restoration revealed different types of figures, including both naturalistic and schematic. The analysis of the figurative and abstract themes chosen and of the techniques used shows well defined modes of representation.

The deliberate and repeated act of setting the painted stones with their decorated side face-down can be seen as evidence of the ritual character of these paintings. The voluntary act of positioning these figures within a limited space was in fact both a creative and symbolic action.

Giampaolo Dalmeri, Michele Bassetti, Anna Cusinato (all Trento), Klaus Kompatscher & Maria Hrozný Kompatscher (Bolzano), Ursula Wierer (Siena):

Updating on the Final Palaeolithic-Mesolithic transition in Trentino (NE Italy).

The Younger Dryas and the beginning of the Preboreal are not well known from an archaeological point of view in Trentino, as these chronological phases are characterised by a decrease in the number of sites when compared to the previous Late Glacial Interstadial. This decrease can be easily explained for the Younger Dryas, which was characterised by a rapid climate deterioration, which lasted about 1000 years. The cold arid climate of the YD, interrupted by brief temperate periods, led to the retreat of the timberline and, probably, to the abandonment of sites frequented during the Late Glacial Interstadial. Nonetheless, recent radiodating carried out at the site of the Riparo Cogola, which preserved a stratigraphic sequence containing fauna, and at the Le Regole sites (LR1 and LR2) indicate that the mountain areas continued to be frequented during the YD. Other sites, characterised by archaeological records consisting only of lithic industry and dated exclusively by analysing lithic typology (as the site of Palù Echen), confirm the presence of middle mountain settlements during the YD.

At the beginning of the Mesolithic, the distribution of the Trentino settlements results greatly modified and also shows a notable increase in the number of sites. During the early Holocene, when the climate stabilised around current values and the timberline reached altitudes of around 2200-2300 m a.s.l., Mesolithic groups primarily frequented rockshelters on the valley floor or areas at high altitude and penetrated the innermost areas of the Alpine chain. When compared to the recent Epigravettian, we note two principal differences: a greater mobility at high altitude to find new hunting grounds to the North and a reduction in the size of the residential camps, around which many more lookout posts or hunting bivouacs sprang up.

Sven Feldmann (York):

Do we interpret what we dig? Thoughts on the history of the German Mesolithic research.

Is our interpretation of the archaeological past based on archaeological facts alone? Or are there other factors that shape our thoughts? Based on an ongoing PhD-research on the history of German Mesolithic research, this paper presents thoughts on the influences from inside and outside archaeology on the development of the research from the beginnings until the end of the 20th century.

Two databases, one of the Mesolithic excavations and the other containing all published research papers, allow to find out more about the development of the research by means of a quantitative approach. Regionally different development as well as especially influential excavations and researchers can be distinguished and their actual influence can be measured.

Furthermore can several interpretations be correlated with the excavated and published archaeological facts. Changes through time within the interpretations can be tracked. As the databases also contain information on which publications and/or excavations each publication relies on, research-networks can be distinguished. The nodes within these networks are then identified as the most influential papers.

Finally the interpretations are correlated with data from without archaeology as the change of the German territory or the unemployment figure. It will be shown that these facts have a great influence on the picture of the Mesolithic as presented by archaeological research.

Ivana Fiore & Antonio Tagliacozzo (Roma):

Strategie di caccia durante il Paleolitico superiore nelle Prealpi orientali.

L'analisi archeozoologica dei siti del Paleolitico Superiore dell'Italia nord-orientale (Grotta di Fumane, Riparo Tagliente, Riparo Soman, Riparo di Villabruna, Riparo Dalmeri, Riparo Cogola) di differente cronologia, localizzati in ambienti e a quote diverse ha mostrato che dal punto di vista quantitativo le differenze nei rapporti tra le specie degli ungulati non sembrano dovute unicamente all'attività umana (strategie di caccia, di macellazione, trasporto nel sito delle carcasse, campo base o sito stagionale), ma riflettono e sono influenzate soprattutto dalle modificazioni climatiche e dall'ambiente circostante i siti. Lo studio dei reperti faunistici è stato effettuato in quasi tutti i siti con la stessa metodologia (es. stagionalità, età di morte, distribuzione spaziale, ecc.) e questo consente confronti puntuali tra i differenti siti. I dati sull'età di morte degli ungulati mostrano che la caccia era diretta in prevalenza verso individui adulti, solamente gli stambecchi di Riparo Dalmeri venivano catturati in età giovanile. In genere le carcasse degli ungulati cacciati erano in genere portate intere nei ripari, fatta eccezione per le prede di grande taglia, e qui processate e macellate. La pesca e la cattura degli uccelli avevano un ruolo marginale e la prima è ben documentata solo a Riparo Dalmeri. Sulla base dei dati archeozoologici e della ubicazione dei siti è stato possibile, in alcuni casi, avanzare ipotesi sulla modalità e sulla durata dell'occupazione dei diversi insediamenti.

Federica Fontana, Antonio Guerreschi, Mana Gionanna Cremona, Fabio Gurioli, Carolina Veronese (all Ferrara), Cristina Cilli, Antonio Rocci Ris (both Torino) & Jeremie Liagre (Chartres, FR):

Recent data on the Late Epigravettian occupation at Riparo Tagliente, Monti Lessini (Grezzana, Verona): an interdisciplinary perspective.

Riparo Tagliente (Tagliente Rockshelter, Stallavena di Grezzana, Verona, Italy), situated in the Lessini Mountains, on the left slope of Valpantena, represents one of Upper Pleistocene key-sites of Northern Italy. The stratigraphic series uncovered is composed of two main deposits which are separated by an erosion surface: the lowest one contains Mousterian and Aurignacian industries while the upper one is characterised by a Late Epigravettian continuous record, ranging between the Ancient Dryas to the Allerød interstadial.

Discovered in 1958 by Francesco Tagliente the site was initially investigated by the Museo Civico di Storia Naturale di Verona (1962-64). Excavations were then resumed (1967) by the University of Ferrara and are still in progress. Up to the mid-seventies research focused on the excavation of a long trench running transversally to the shelter and a smaller one located in the most internal area allowing the chrono-stratigraphic sequence of the deposit to be defined along with its palaeo-environmental contents. In the same years the discovery of an Epigravettian burial and a rich collection of mobile art objects dating back to the same period encouraged further investigations. Thus, starting from the late '70s excavations in the Late Epigravettian deposits have extended over the whole northern area of the site, leading to the discovery of some well preserved dwelling features in the zone protected by the shelter and of other interesting evidence in the area located in front of the rock wall.

The aim of such extensive explorations is to gain insights into the patterns of organisation of activities and resource exploitation within the site during the different occupation phases at the end of the Epigravettian. Therefore, as field investigations are progressing, a new program of interdisciplinary studies has been established, including the systematic zooarchaeological and taphonomic analysis of faunal remains, the techno-economic and functional study of both lithic and bone assemblages, the exam of the rich malacological collection and a review of the important collection of Late Epigravettian engraved art objects. In order to analyse internal organisation of occupied living space in a dynamic functional perspective a distribution analysis integrating attributes derived from the analysis of the different categories of archaeological findings recovered (lithic artefacts, faunal assemblage, bone artefacts, marine and fossilized shells, nodules of iron oxyds, etc.) with spatial information is also in progress.

Laure Fontana (Aix-en-Provence, FR):

Reindeer exploitation during the French Upper Palaeolithic: new hypothesis.

What was the Reindeer position in the economic system of Western European Upper Palaeolithic societies? I try to investigate this topic by first asking two questions. How great was its role and was it considered first as a food resource or a raw material? Its exploitation patterns must be known, from the procurement to the consumption-utilization, and have to be identified at the scale of the whole annual cycle. Indeed, quantity and quality of the resources contained in a Reindeer carcass (meat, fat, antler, skin...) depend on the season (like its social structure) and the exploitation patterns were related to this seasonal cycle.

Data analysis of four well-documented French areas (Paris Basin, Massif Central, Southwest, Pyrénées) are presented and discussed here. First, it appears that the position of the Reindeer as a game can be very different from site to site and has to be correlated, at each site, to the hunting season(s) and to the precise exploitation patterns of the carcasses; there is no other way to identify the role of the Reindeer (specially compared to the Horse), as a food and a technical product, in the economic systems. On the opposite, hunting strategies appear surprisingly similar in the four regions, whatever the period and the site considered: a non-selective hunting, in terms of age, as mortality profiles witness. As it was expected, Reindeer has been hunted at various seasons, as indicated by the teeth and antlers studies, but some strong differences do exist. In Southwest France at least, the fact that Reindeer has been killed at different seasons, indicates that this animal was staying in this large region all year round and so, probably without migrating. On the contrary, the lack of Winter Reindeer hunting has been documented for the Paris Basin and the Massif Central and can be explained in many ways. It seems that the carcass exploitation patterns, a very poorly documented topic, have been rather similar than different, based on entire carcasses brought back to the site after the hunting. If Reindeer procurement and carcass exploitation had some specific aims at some sites, zooarchaeological studies have not yet yielded such evidence, even concerning antler exploitation, which is the main problem. Indeed, antler industry, as antler remains, is very rare at Paris Basin and Massif Central sites where Reindeer was the main game, and if Reindeer antler has been very used in the Southwest and the Pyrénées, we ignore almost everything about its procurement and its exploitation. Then, these preliminary results are discussed in relation to data concerning the exploitation of other resources in order to get a broader picture on the economic system of these societies because we have to understand if Reindeer occupied a central position, *i.e.*, for instance, specific territory exploitation. Finally, I discuss the way of knowing if Reindeer exploitation was a unique system and if it evolved from the start to the end of the Upper Palaeolithic?

Silvia Frisia, Andrea Borsato, Maria-Letizia Filippi (all Trento), Enrico Arpenti (Milano) & Oliver Heiri (Utrecht):

Late Glacial Palaeoclimate evolution (Evoluzione Paleoclimatica nel Tardo Glaciale).

Late Glacial climate evolution in the North-Eastern Alps of Italy was reconstructed from chemical and biological proxy data from different archives. Sediments commenced to deposit at the bottom of lakes located at mid to high altitude in the Italian NE Alps soon after the deglaciation, possibly as early as 18,000 years ago. Yet, speleothems at mid-altitudes did not start to form prior to ca. 10,000 years ago. Threshold conditions for their growth (sufficient water surplus and well developed soil) had not been reached during the Late Glacial. A stalagmite collected at 441 m above sea level in a cave near Trieste, however, started to grow at ca. 17 kyr. Growth rate, which depend on temperature, was slow from ca. 17 kyr BP up to 10.6 ± 0.22 kyr BP, reaching a minimum in the Younger Dryas (ca. 12.5 to 11.5 kyr BP). The $\delta^{18}\text{O}_c$ values, indicate similar to, or slightly cooler temperatures than in the Holocene, with the exception of the cold Younger Dryas. By considering growth rate we infer that in the Late Glacial sub-zero temperatures characterized most of the winter, whereas summer temperatures may have been similar to those of the Holocene. Low $\delta^{13}\text{C}_c$ values around ca. 14.6 to 15 kyr BP and between ca. 13 and 14 kyr BP indicate humid and warm summer (?) conditions. This scenario is in agreement with pollen and chironomid data from lake sediments. In the Early Late Glacial the vegetation at mid and high altitudes (> 1000 m asl) consisted of Xerophytes. At elevations below 1000 m. *Pinus cembra*, *Betula* and *Alnus viridis* colonized deglaciated areas. By ca. 14,450 to 14,500 years cal BP the arboreal vegetation > 1000 m consisted of mainly *Pinus sylvestris/mugo* and *Pinus cembra*, whereas xerophytes grasses like *Artemisia* diminished. These pollen data indicate expansion of tree species, possibly related to warm/wet summers (Bolling – Allerød Interstadial).

The Younger Dryas was most probably characterized by cold temperatures, as indicated by chironomid associations in Lake Lavarone, and relatively dry conditions, but there was an inter-YD period of wetter and warmer conditions. The structure of the Late Glacial appears to be compatible with both the early ending of full glacial conditions in Antarctica and the steps toward full interglacial climates recorded in Greenland.

Birgit Gehlen (Kerpen-Loogh):

Living under a rock shelter during the Allerød period – The reconstruction of human behaviour by spatial distribution of original workpieces and refitting sequences.

Students from the Institute of Prehistory at the University of Cologne excavated in the Abri ‘Unter den Seewänden’ during their summer holidays from 1984 to 1988. The site is at Weissensee, near Füssen, in the Southern Allgäu district (South Bavaria). It is situated at an altitude of app. 920 m on the northern slope of the Falkenstein range, just a few kilometres from the actual Alps. The finds (stone artefacts and charcoal) and features investigated suggest that at least three times a small camp had been set up under the narrow overhanging rock face in the Allerød period around 11,400 calBC. The reconstruction and analysis of the original workpieces in combination with the obvious features (at least 3 fireplaces and 1 pit) indicate several short stays of one to three persons. These results were published 2001 (Gehlen 2001).

In the following I took a closer look at the 21 refitting sequences. The chronology of the sequences as well as the distribution of the connected stone artefacts lead to the reconstruction of what these persons had done and how they had moved around underneath the rock face during their different short stays. As a result this small assemblage of stone artefacts from the Abri ‘Unter den Seewänden’ allows a close look into the behaviour of single persons at a very small campsite during the Late Glacial at the foothills of the Northern Alpine Region.

Reference:

GEHLEN, B. (2001), Rast am Fuße der Alpen. Die allerödzeitliche Abristation bei Füssen im Ostallgäu. *Mit einem Beitrag von Jutta Meurers-Balke. In: GEHLEN, B., HEINEN, M. & A. TILLMANN (Hrsg.), Zeit-Räume. Gedenkschrift für Wolfgang Taute. Archäologische Berichte 14, Bd. 2. Bonn 2001, 475-552.*

Elham Ghasidian, Saman Heydari & Nicholas J. Conard (all Tübingen):

Current research on the Upper and Epipaleolithic of Iran.

During two seasons of research in 2005 and 2006, the Tübingen Iranian Stone Age Research Project (TISARP) team has investigated several regions of Iran. The project has identified nearly 80 archaeological sites dating to the Middle, Upper (Baradostioan) and Epipaleolithic (Zarzian). Many of the more important sites date to the Late Pleistocene. They are concentrated into two regions of Iran, the Central Plateau (Qaleh Gusheh) and the south western Zagros (Dasht-e Rostam).

These two concentrations of sites produced rich assemblages of lithic artefacts. In the Central Plateau we have focussed our research on the open-air site of Bardia in the Qaleh Gusheh sand dunes near Arisman, where we recovered 7680 chipped lithic artefacts dating to the Epipaleolithic. From the other main research area in south western Zagros, we have documented lithic assemblages from 42 sites, most of which are associated with caves and rockshelters.

This paper presents technological and typological data from these new sites and compares the laminar technologies documented at these sites with laminar technologies known from other parts of the Zagros Mountains. Our fieldwork in Iran documents new assemblage types that help to define the cultural processes and technological variability during the later phases of the Baradostian and during the Zarzian. By examining these assemblages from regions that were previously unstudied, we begin to see increasing complexity and in the regional signatures of the prehistoric record of Iran.

Stefano Grimaldi (Trento):

Thoughts on the Early Mesolithic adaptive strategies in Northeastern Italy.

Author will give an overview of the results coming from his own research related to the definition of the adaptive strategies of the early Mesolithic hunter gatherers in northeastern Italian Alps. The research is concerning three main topics.

1. The exploitation system of mountain resources: Authors suggests a settlement/mobility system adopted by early Mesolithic human groups in northeastern Italian Alps. Archaeological and ethnographical data are shown to stress the existence of a territory covering the entire northeastern Italy, from the southern Alps to the Adriatic Sea, and where hunter gatherers may have exploited both terrestrial and marine resources.

2. Settlement dynamics at the Preboreal/Boreal transition: Charcoal samples from the Colbricon open air sites 3, 7, 8A and 9 (north-eastern Italian Alps) were dated. The AMS calibrated 14C ages obtained, while confirming the cultural attribution of the sites to the early Mesolithic, indicate an adaptive change between the earliest and the latest sites. Author suggests this change, clearly evidenced by differences in settlement typology, could be linked to the environmental modifications occurred at the Preboreal-Boreal transition. This hypothesis is also supported when evidences from other north-eastern Italian early Mesolithic sites are compared.

3. Experimental observations on microlithic arrowheads: A sample of Sauveterrian microlithic arrowheads coming from both high and low mountain sites in northeastern Italian Alps are analysed. Sample comes from open-air high mountain "Colbricon" and "Buse" sites (about 2000m asl), located near glacial lake shores and considered as seasonally-occupied hunting camps, and from "Pradestel" rockshelter (225m asl in the Adige valley floor), that provides a complete Mesolithic stratigraphic sequence showing chronologically-differentiated faunal and floral associations. Experi-

mental observations provide further data concerning ballistic and functional properties of these lithic items.

Miriam Haidle (Tübingen):

How to think a simple spear?

The cognitive development in the Lower Palaeolithic is usually summarised as very slow and primitive. Obviously, the types of stone tools don't change very much, rare tools from other raw materials are simple, anticipation seems to be limited to basic raw material procurement. Yet, if not only viewed in typological categories from modern perspective, Lower Palaeolithic tools can offer more than that. The cognitive processes needed to produce a wooden spear, as it is known from Schöningen, Lower Saxony, are coded here in a thought process chart. This chart includes the initial perception of a basic need, perceptions of sub-problems like the need of certain tools to continue the manufacture, active and passive attention foci open in the production process, the different phases with sub-goals, and in the end the satisfaction of the basic need. The cognitive process behind the manufacture and use of a simple spear takes some days, is interrupted several times, and has to be run independently from immediate needs. This vast extension of the distance between perceived problem and solution becomes thinkable only with the spin-offs of sub-processes. They allowed *Homo heidelbergensis* to organise their tool behaviour cognitively sophisticated in an abstract and effective way.

Felix Hillgruber, Knut Bretzke & Nicholas J. Conard (all Tübingen):

Technological Change and Continuity in Upper and Epipaleolithic of Western Syria.

Excavations between 1999 and 2006 by the *Tübingen Damaskus Ausgrabung und Survey Projekt* have yielded results with considerable bearing on our understanding of the cultural and chronostratigraphy of the Upper and Epipaleolithic of the central Levant. So far we have excavated three sites; Baaz Rockshelter, Kaus Kozah Cave and Ain Dabbour Cave, which all lie in the foothills of the Anti-Lebanon Mountains near the towns of Ma'aloula and Yabroud. While Kaus Kozah and Ain Dabbour have produced assemblages, particularly from the Epipaleolithic, Baaz provides a good record of the Upper, Epipaleolithic and early Neolithic extending back to 34,000 BP.

This paper will present the key aspects of the lithic assemblages from these sites and will place them within the context of results from an extensive Paleolithic survey of this region. We will also examine the implications of these excavations for our understanding of cultural change and continuity within the Levant.

Olaf Jöris (Neuwied) & Bernhard Weninger (Köln):

The Final Frontier of Radiocarbon Dating and the Middle to Upper Palaeolithic Boundary.

A reliable age-model is of crucial importance for the understanding of the demographic processes underlying the Middle to Upper Palaeolithic transition. Since radiocarbon dating is most widely applied within this period to support calibration of the radiocarbon time scale at its very limits, we have developed the software package < CalPal > (Cologne Calibration and Palaeoclimate Research Package; <http://www.calpal.de>).

Problems and perspectives of radiocarbon calibration beyond ca. 30.0 ka ¹⁴C BP are discussed in the context of palaeoclimate data.

Jacek Kabacinski (Poznan, PL) & Thomas Terberger (Greifswald):

The early pottery in the Baltic – new results.

Since the 19th century pointed bottom pottery is known as an element of the Ertebølle Culture. The last twenty years provided increasing evidence that late hunter-gatherer-fishers used similar types of pottery in different parts of western and northern Europe. In the Baltic Sea area there is an ongoing discussion on the origin and relationship of the early pointed bottom pottery. In the 1990ies Eastern influences were addressed for the introduction on a rather poor data basis. The lecture will present new information for the subject from the site of Dabki situated close to the Northern Polish coast. Finally the evidence will be discussed on a more general scale.

Claus-Joachim Kind (Esslingen):

Hazelnuts and Beaver Steaks – The Mesolithic in Southwest Germany.

Research on the Mesolithic sites of southwest Germany started at the beginning of the last century, when the famous skull burials of Ofnet Cave were assigned to a cultural stage which was called Azilien-Tardenoisien (Schmidt 1913). During the 1920s and 1930s intensive research was conducted in Mesolithic cave and rockshelter sites (Peters 1934, 1935) as well as open air sites (Reinerth 1930). Starting in the 1960s and continuing into the 1970s, Wolfgang Taute developed a very detailed typological and chronological division of the Mesolithic. He divided the southwest German Mesolithic into an early stage called Beuronian and a later stage called “Late Mesolithic” (Taute 1971, Taute 1973/74a, 1975).

In the 1980s new questions arose concerning both land use and exploitation of resources during the Mesolithic, which guided subsequent research (Jochim 1976, 1993, 1998). In the 1990s, investigations into both the technological aspects of flint artefact production and the use of different lithic raw materials became central topics of Mesolithic research (Hahn 1998, Kind 2003, Pasda 1994). Finally, based on excavation in the large Mesolithic open air sites of Siebenlinden, questions concerning the spatial organisation of campsites wait for an answer. Thus, it can be concluded that ongoing investigations of the Mesolithic in southwest Germany have always reflected the current direction of international scientific discussion.

Laura Longo (Siena) & Paolo Giunti (Livorno):

Techno-economical choices and mobility strategies during Middle Palaeolithic in the Lessini Mountains (Northern Italy).

The significant role played by the rich flint sources of the Lessini Mountains, along with their favourable geography and exposure and the presence of caves and rock shelters, have allowed to establish an excellent balance among economic, environmental and climatic variables during Palaeolithic times. In order to verify the theoretical model at the basis of our study project and to propose a reconstruction of the techno-economical strategies carried out during the Middle Palaeolithic, we are presenting some considerations regarding the quality of available flint and its exploitation potential in terms of volume economy and in relation with the cultural tradition of the Lessini techno-complexes analysed. The archaeological study have been carried out at open air sites and cave like Monte Gazzo (early and late phase of Late Acheulean) Cà Verde (Middle Palaeolithic) and the cave of S. Cristina (Middle and Upper Palaeolithic) whereas in deep geological investigations were carried out on the flint outcrops of Vajo delle Cavazze and Monte Gazzo.

So far, it seems possible to underline different approaches in raw material exploitation and mobility strategies during the time span considered.

A more expedient approach in the Early Middle Palaeolithic (EMP) top hills open air site, where core technologies are designed to meet functional needs more than being much concerned for raw mate-

rial volume conservation. In fact EMP hunter-gatherers were preferably using microcrystalline flints which ensured the result of obtaining large blanks with minimum effort in core carving, a different strategy seems to be mastered during LMP and UP. The rheological behaviour of cryptocrystalline flints seems to be more suitable in order to obtain formal reduction strategies, where raw material volumetric exploitation is organized to produce blanks with specific morphologies.

In terms of mobility strategies and therefore of settling dynamics in EMP vs LMP and UP it seems that the production of blanks with cutting edges which meet the functional needs - characterized by suitable width, length and angle of the blanks - should be accomplished with little consideration to raw material conservation.

It seems that in the case of Lessini Mountains the constraints of flints quality and availability are not related to minimize raw material transportation costs - flint is enormously easy to find - but due to the reduction strategies. Therefore formal reduction strategies are common in less ephemeral foot hills sites where circulating model was preferably applied.

Dott. Anna Lunardi (Siena):

Grinding Stones and polished stone axes: Experimental research in the Adige Valley.

The experimental research presented herein regards the reproduction of the operations which led to the transformation of raw materials into manufactured stone tools. In particular, are presented the experimental analysis about two important Neolithic tool types: the polished stone axes and the grinding stones. The analysis is divided in three phases: the first phase is the choice of the rocks suitable for the implements; the second phase consists of the technological modifications of the lithic supports to prepare the working surfaces and the third phase regards the use of the tools to carry out various tasks (i.e. cutting wood, pointing branches and felling trees for the axes or grinding cereals and minerals for the grinding stones). The results show that the choice of the raw material is the key factor to obtain the best functional performances and rheologic responses of the tools.

Preston T. Miracle (Cambridge) & Darko Komso (Istria):

The Late Upper Palaeolithic and Mesolithic of the Northern Adriatic Region.

Recent intensive field work in Istria and the Kvarner region provides the basis for a new synthesis of Late Upper Palaeolithic and Mesolithic cultures and adaptations. In this paper we synthesize and compare results of lithic and faunal analyses. The main focus of settlement at the LGM appears to have been the Great Adriatic Plain. During the late Pleniglacial we can trace the pioneering activities of Epigravettian groups in northern Istria and the island of Losinj. With the onset of the late glacial interstadial (GI-1e, ca. 14.7 ka Cal BP) we have a shift to a redundant pattern of exploitation of the Istrian hinterland, and over time, there is evidence of further differentiation among occupied sites. The Younger Dryas (GS-1, ca. 12.9 - 11.5 ka Cal BP) is associated with an apparent contraction of settlement in the region. Finally, with post-glacial warming, there is further settlement expansion - encompassing now upland environments - as well as evidence of a restructuring of mobility patterns. During the Mesolithic, new kinds of places and landscapes were created. Finally, there appears to have been a wholesale abandonment of caves and rockshelters during the Late Mesolithic.

Luc Moreau (Tübingen):

Geißenklösterle. The Swabian Gravettian in a European Context.

The Southwest German Gravettian is part of a long history of research associated with the University of Tübingen and centered mainly on the Ach Valley, a tributary of the Danube located on the southern fringes of the Swabian Jura plateau. R.R. Schmidt (1912) pioneered excavations at Sirgenstein at the beginning of the past century, G. Riek (1973) led the excavations at Brillenhöhle, and a multidis-

disciplinary team under J. Hahn excavated at Geißenklösterle with interruptions from 1973 to 1991. Excavations at Geißenklösterle were continued under the direction of N.J. Conard who excavated parts of the Middle Palaeolithic deposits from 2000 to 2002 and still leads the fieldwork in the current excavations at Hohle Fels. Due to the high quality of the excavation method at Geißenklösterle and Hohle Fels, and given the stratigraphic integrity of these sites, demonstrated by refits, micromorphology and technological studies, the Aurignacian and Gravettian industries constitute reference series for the early and middle Upper Palaeolithic of Central Europe. The Swabian Gravettian was ¹⁴C AMS dated between ca. 30 and 27 ka BP (Conard and Bolus 2003) thus continuing a series of dates for the underlying Aurignacian. From a chronostratigraphical point of view, the industries represent an ancient Gravettian.

The present work will focus both on a diachronic and macroregional perspective. First, on a regional scale, the question of the similarities and differences between the Aurignacian and Gravettian will be addressed in terms of techno-economic behavior based on the Geißenklösterle lithic assemblage. Second, in a macroregional perspective, we wish to address the question of the multi-regional character of the technological innovations of the ancient Gravettian in Middle Europe. For that, the ancient Gravettian facies of Swabia will be compared with the industry of Willendorf II/layer 5 dated at 30,500 BP (Damblon et al. 1996).

Elisabetta Mottes (Trento):

New data on the absolute chronology of the Neolithic of the Adige Valley in Trentino. = *Nuovi dati sul Neolitico antico in Trentino.*

The many works concerning the issue on the origins of the Neolithic in the Adige Valley, mainly undertaken by Bernardino Bagolini, have underlined how this phenomenon came about gradually by means of an acculturation process, which determined the "ceramization" of the local substratum in an economic and technological background, mainly tied to the Mesolithic tradition (BAGOLINI, 1980; 1990; BAGOLINI, BROGLIO, 1985; BAZZANELLA *et al.*, 2000).

According to an hypothesis recently put forward, a complex phenomenon of colonization in two phases (Late Mesolithic and Early Neolithic) has taken place in the Gaban Group, starting from an external region (Central Italy or, more probably, Western Balkans) (PERRIN, 2006). Nevertheless, at the present time there is no clear picture as to the cultural and chronological development of the Early Neolithic period of the Trentino territory of the Adige Valley. Only on the base of the evidence of the Layer AA 1-2 of the rock-shelter site of Romagnano Loc III, radiocarbon dated to the half of the 6th millennium BC cal, it is possible to distinguish the transitional phase during which the first Early Neolithic elements (few pottery sherds, new tools types) appear in a Mesolithic economic and cultural background.

New radiocarbon datings obtained from the Gaban Group layers of the settlement sites of La Vela di Trento and Ala - Le Corone in the Adige Valley allow us to have a more clear picture of the cultural development of the Group. This seems to take place in a late moment of the Early Neolithic, differently from the Po plain where fully Neolithic communities existed since the first half of the 6th millennium BC cal (IMPROTA, PESSINA, 1998).

Due to the scarcity of the archaeological evidence and to the lack of radiocarbon datings covering the time span of the late Mesolithic (Castelnovian) and the Early Neolithic Gaban Group, at present it is hard to define the processes which led to the neolithisation of the local Mesolithic substratum and to suggest models of acculturation/colonization.

References:

- BAGOLINI B., 1980. Introduzione al Neolitico dell'Italia Settentrionale nel quadro dell'evoluzione delle prime culture agricole europee. Società Naturalisti "Silvia Zenari", Pordenone.
BAGOLINI B., 1990. La neolitizzazione del versante meridionale delle Alpi centro-orientali. In: AA.VV., Die ersten Bauern, Band 2, Schweizerisches Landesmuseum Zürich, pp. 211-217.

- BAGOLINI B., BROGLIO A., 1985. Il ruolo delle Alpi nei tempi preistorici (dal Paleolitico al Calcolitico). In: LIVERANI M., PALMIERI A., PERONI R. (a cura di). Studi di Paleontologia in onore di Salvatore M. Puglisi, pp. 663-705.
- BAZZANELLA M., MOSER L., MOTTES E., NICOLIS F., 2000. Il Neolitico antico di Mezzocorona-Borgonuovo (Trento). In: PESSINA A., MUSCIO G. (a cura di). La Neolitizzazione tra oriente e occidente, Atti del Convegno di Studio, Udine, 23-24 aprile 1999, Comune di Udine, Museo Friulano di Storia Naturale, pp. 151-171.
- IMPROTA S., PESSINA A., 1998. La neolitizzazione dell'Italia settentrionale. Il nuovo quadro cronologico. In: PESSINA A., MUSCIO G. (a cura di). Settemila anni fa il primo pane. Ambienti e culture delle società neolitiche, Catalogo della mostra, Museo Friulano di Storia Naturale, pp. 107-115.
- PERRIN Th., 2006. Nouvelles réflexions sur la transition Mésolithique récent - Néolithique ancien à l'abri Gaban (Trento, Italie). *Preistoria alpina*, 41 (2005), pp. 89-146.

Susanne C. Münzel & Nicholas J. Conard (both Tübingen):

Personal ornaments from the Upper Palaeolithic of the Swabian Jura: Their archaeological context and meaning.

The paper will focus on the key sites from the Ach Valley of the Swabian Jura including the caves of Brillenhöhle, Geißenklösterle and Hohle Fels. Especially from Hohle Fels, a large variety of different forms of personal ornaments and pendants from the Magdalenian, Gravettian and Aurignacian have been recovered during recent excavations. Among the numerous forms of personal ornaments, some show a high degree of standardization. Interestingly some forms are fairly numerous and persist for several thousand years, while others are unique single finds. Some types of personal ornaments, for example ivory beads, show standardized manufacturing that we can often document on site. These data allow us to reconstruct synchronic and diachronic patterns in the faunal raw material economy during the Upper Paleolithic of the region. Special attention will be paid to pendants made from the teeth of game animals. Since animal teeth are not just jewelry but also reflect a successful hunt, they might have the character of trophies too. Following the work of M. Vanhaeren, we will consider how personal ornaments and tooth pendants from the Swabian Jura fit into patterns of spatial and temporal variability across Europe.

Christine Neugebauer-Maresch & Thomas Einwögerer (both Vienna):

Another infant burial from the Upper Paleolithic site Krems-Wachtberg, Lower Austria.

After the sensational discovery of a double infant grave under an intentionally modified scapula at the Wachtberg in Krems, Lower Austria, in September 2005, the excavations were continued in 2006. The archaeological campaign of the Prehistoric Commission of the Austrian Academy of Sciences lasted 6 months and was funded by the FWF Austrian Science Fund, project 17258-G02 (project manager: Dr. Christine Neugebauer-Maresch) and the phil. hist. class of the Austrian Academy of Sciences.

So far 18 square metres have been examined and documented. By using standard methods, well over 63,000 points were measured and over 17,000 artefacts recovered. Among those stone artefacts, bones, bone tools, jewellery, as well as charcoal and bonecoal.

During these latest archaeological investigations it was possible to uncover another Gravettian infant grave, in addition to further distinct settlement structures and extensive other finds. Just like the infants found in 2005, the newly discovered individual was also embedded in red ochreous powder. The similarities between the two graves with the three infants with regard to construction and burial objects suggest a particular burial rite. Both infant graves are currently being examined by M. Teschler-Nicola (Natural History Museum Vienna, Department of Anthropology).

A total of 11¹⁴ C dates place the finds in the Gravettian period. Stone artefacts like micro-saws and one burnt clay object with fingerprints point to a connection with the Pavlovian sites in the South Moravian area. From a 9,5 metre high profile samples for sedimentology, malacology, paleobotany, OSL dating, TL dating, paleomagnetic and susceptibility were retrieved – already with first results.

Philip R. Nigst (Leipzig):

Willendorf II and the Middle to Upper Palaeolithic transition in Central Europe: A first note on the 2006 field work (Hugo Obermaier Prize 2006).

The discussion of the timing and nature of the Middle-to-Upper Paleolithic transition centers on the Aurignacian, its origin(s) and its relationship to the transitional industries. Several models have been proposed to explain the existing spatio-temporal patterning of Early Aurignacian and Proto-Aurignacian sites in Europe. Central Europe and especially the Middle Danube Region is an ideal testing ground for these models, because of the coexistence of both Early Aurignacian and transitional industries (e.g., Szeletian, Bohunician). Although its last excavation dates back to 1955, Willendorf II is one of the most important sites in the region because of deposits covering a long timespan from > 45 to 23 ka BP. In these well stratified deposits two Early Upper Paleolithic (layers 1 and 2), one Early Aurignacian (layer 3), one typical Aurignacian (layer 4), and five Gravettian archaeological horizons are known (Haesaerts et al. 1996; Nigst 2006).

In summer 2006 the author, together with an international team, started a re-excavation of the site. This field work was made possible by funding from the Hugo Obermaier Gesellschaft (Hugo Obermaier Prize 2006) and other funding organizations. This presentation gives an overview of the new project and the field work. First results are presented and discussed in the framework of the Middle-to-Upper Paleolithic transition discussion.

References:

- Haesaerts, P., Damblon, F., Bachner, M., Trnka, G., 1996. Revised stratigraphy and chronology of the Willendorf II sequence, Lower Austria. *Archaeologia Austriaca* 80, 25-42.
- Nigst, Ph. R., 2006. The first modern humans in the Middle Danube Area? New Evidence from Willendorf II (Eastern Austria). In: Conard, N. J. (Ed.), *When Neanderthals and Modern Humans Met*. Kerns Verlag, Tübingen, pp. 269-304.

Annalisa Pedrotti (Trento):

The Central Alps human population during the rise of agriculture.

= *Il popolamento delle Alpi centro orientali alla comparsa dell'agricoltura.*

Il Trentino Alto Adige, situato sul versante meridionale delle Alpi, a diretto contatto con la pianura padano-veneta, è da sempre considerato, con il Veneto orientale, grazie al diretto collegamento segnato dai corsi dell'Adige e dell' Isarco, un'importante area di cerniera tra il mondo mediterraneo e quello nordalpino. Tale territorio a partire dal 1970, anno a cui risale la scoperta, effettuata da Bernardino Bagolini, presso i laghetti del Colbricon a m 1900 slm, di bivacchi mesolitici, è stato oggetto di numerose prospezioni e campagne di scavo volte soprattutto ad individuare presenze preistoriche in alta quota e nel contempo a chiarire i processi formativi delle prime comunità di agricoltori e allevatori stanziate per lo più nel fondovalle. Le ricerche condotte a tale scopo, negli ultimi anni, dalla cattedra di Paleontologia, forniscono nuovi elementi per approfondire lo studio dei modelli insediativi e delle strutture abitative in questo territorio.

The western sector of Veneto, the Province of Trento and Südtirol are located between the Po Valley and the southern side of the Alps and cross cut by the Adige and Isarco rivers. Because of the geographic and morphologic setting this area was the connection between the Mediterranean and the North Alpine cultures. Since the discovery of Mesolithic bivouacs at 1900 m a.s.l. on Colbricon by Bernardo Bagolini in 1970, the researches have uncovered a large number of temporary settlements, open area sites and rock shelters in mountainous areas, as well as sites located on valley floors, which have contributed to understanding the formative processes of the first farmer communities. In the last years, a team of the Laboratory of Prehistory of the University of Trento has been carrying out research and excavations in settlements that have yielded new information about settlement occupation and dwelling structures.

Carlo Peretto, Ursula Thun Hohenstein & Marta Arzarello (all Ferrara):

The Mousterian sequence of Riparo Tagliente: techno-economical behaviours and subsistence strategies.

The site of Riparo Tagliente, which was discovered in 1958 by F. Tagliente, lies on the left side of the Valpantena at 250 metres above sea-level. The stratigraphic series, which was deposited in the Upper Pleistocene, can be divided into two main units separated by an erosion surface: deposits with Mousterian (OIS 3) and Aurignacian industries and deposits with Epigravettian industries. A study, finalized to understand the techno-economical behaviours and subsistence strategies has been carried out on the lithic industries and the faunal assemblages, coming from the lower part of the stratigraphy. By the techno-economic point of view, the Mousterian series is characterized by the presence of various flaking methods, which are represented by different frequencies in all the layers. Raw materials have been collected in secondary position from the river Progno of Valpantena. High quality flints, that come from the formations of Biancone, Tenno, Scaglia Rossa and Scaglia Variegata, have been used. The reduction sequence is completely documented both for every method and layer as revealed by the products (cortical flakes, *plein débitage* flakes, retouch flakes, *débris*, retouched artefacts), cores and numerous refittings. Among the identified methods the opportunistic one dominates, followed by the Levallois recurrent and discoid. Starting from layer 37 the laminar method becomes important too.

The archaeozoological study carried out on the faunal assemblages has pointed out the importance of human agency in the accumulation and modification of bone remains. The majority of bone remains can be attributed to large mammal species: among ungulates the most represented species is roe deer, followed by red deer, ibex and chamois; among carnivores, wolf and bear are dominant, but both rare; among rodents a number of marmot remains have been identified. In the lower layers of the Mousterian sequence, among artiodactyles the composition of the faunal assemblage remains unchanged, whereas among carnivores an increase in the number of remains has been observed, together with a greater variety of *taxa* (wolf, fox, bear, leopard, mustelids).

The taphonomical analysis revealed that several marks of human activity have been observed on bone fragments belonging to ungulates all over the sequence. These marks can be attributed to the exploitation of the animal carcass both for food procurement (butchery, intentional bone fracturing for marrow extraction) and for using bone fragments as retouchers. Cutmarks have been found even on some marmot bones. Marks of non-anthropogenic origin (exfoliation, erosion, carnivore and rodent gnawing) are relatively rare but more frequent in the lower layers, suggesting an irregular occupation of the site by these animals when Neanderthals were absent. All these data testify an intensive occupation of the site by humans during some phases of the Mousterian, as already documented by the lithic assemblage. They also enable us to define human behaviour and the strategies adopted in relation to the environment surrounding the rockshelter.

Martina Sensburg (Neuwied):

Gönnersdorf & Andernach: Re-evaluating Magdalenian intrasite spatial organisation and landuse patterns in the German Central Rhineland.

The Magdalenian sites of Gönnersdorf and Andernach have become famous for their unique settlement features. The state of preservation, the large size of the excavated areas as well as comprehensive documentation make it possible to undertake detailed spatial analyses on both sites investigated. The results of these studies will be an important source of information for the understanding of the behaviour of Magdalenian hunters and foragers.

Most of the analyses undertaken in Gönnersdorf and Andernach were material-oriented studies of individual find categories – the bulk of which resulted in master-/ PHD-theses or appeared as monographs.

During the last 30 years, spatial analyses of Gönnersdorf settlement structures were published of large-scale features and finds in Concentration I, in Concentrations III and IV. With the presentation of the analysis of the largest of the concentrations, the centrally-located Concentration II (M. Sensburg 2007a in press, 2007b in prep.), the gap in the global analysis of Gönnersdorf was closed. Based on these latest results a model for the internal spatial organisation of Concentration II will be introduced as well as newly developed questions concerning inter-concentrational relations, time depth and the overall character of the Gönnersdorf site. Already existing studies of the individual Gönnersdorf features will be integrated as well as a comparison with previously available data from the Magdalenian site of Andernach.

References:

- Sensburg, M. (2007a in press): Die Siedlungsbefunde des Magdalénien-Fundplatzes Gönnersdorf. Untersuchungen zur räumlichen Organisation der Konzentration IIa. Monographien des RGZM, Mainz und Bonn.
- Sensburg, M. (2007b, in prep.): Die Siedlungsbefunde des Magdalénien-Fundplatzes Gönnersdorf. Untersuchungen zur räumlichen Organisation der Konzentration IIb.

Jordi Serangeli & Michael Bolus (both Tübingen):

Europe during the Last Glaciation: Differences in Perception North and South of the Alps.

The fact that science, too, is subject to trends and the spirit of the times is accepted for the most part. Naturally, this is especially true for a scientific discipline such as Prehistory which aims at producing insights into the human past. In our paper, we would like to stress that, besides this, there are also clear-cut geographic differences in the perception of the Palaeolithic in general and of the Last Glaciation in particular. From the different regional views and traditions within the Palaeolithic research, the Mediterranean view and the central European view will be highlighted and contrasted in the paper. Especially by means of graphical reconstructions of the environment and the appearance of our ancestors as well as by means of mapping ‘important’ hominin fossil remains and sites, we want to draw the attention to these different modes of perception. Doing so we want to contribute to a – in our opinion – more objective analysis of the European Palaeolithic in general and the Neanderthals in particular.

Leif Steguweit (Erlangen), Mircea Anghelinu (Targoviste, RO) & Ulrich Hambach (Bayreuth):

Long Upper Palaeolithic sequences in Romania – Recent results from the Sites of Poiana Cireşului, Bistricioara-Lutarie and Ceahlau-Dârţu (Bistrita valley, NE-Romania).

The new data on three East Carpathian sites with a long Upper Palaeolithic sequence display a timeline of the Aurignacian/ Gravettian transition, which is compatible to Central and Eastern Central Europe. The ¹⁴C data series (AMS laboratory Erlangen, 2006) is consistent in all cases and fits together with geological observations concerning the expected loess accumulation rates and soil formations. The mainly significant younger dates from A. Paunescu's (1998) sampling (conventional data) could be caused by mixed materials.

The new data of the Bistriţa Valley confirm also the recently investigated Aurignacian/ Gravettian timeline from Mitoc and Molodova (Haesaerts et al. 2004). The assumption of a "Late Aurignacian" contemporary to the Gravettian in the Bistriţa Valley as one of the key regions in South-Eastern Europe can now be rejected (Hahn 1977, 11-28/ 298-304). While the circulation of lithic raw materials (Prut and Dniestr flint sources) displays connections to the Moldavian-Ukrainian plains and the Northern Black Sea region, a similar false conclusion reasoned by radiocarbon data seems possible there, when some workers still consider an Epi-Aurignacian from 22/21 to 18/17 ka uncal. BP (for a detailed discussion see Demidenko & Nuzhnyi 2004). Though the loess sequence of the Bistriţa Valley contains only the Upper Pleniglacial, a correlation with the long sequences like Mitoc and Molodova could complement that puzzle.

References:

- Cărciumaru, M., Anghelinu, M., Steguweit, L., Niţă, L., Fontana, L., Brugere, A., Hambach, U., Mărgărit, M., Dumitraşcu, V., Cosac, M., Dumitru F. & O. Cârştina (2006), The Upper Paleolithic site of Poiana Cireşului – Piatra Neamţ (North-Eastern Romania). Recent results. – *Archäologisches Korrespondenzblatt*, 3, 319-331.
- Demidenko, Y.E. & D.Y. Nuzhnyi (2004), Upper Palaeolithic Problems in the North Black Sea Region and I.V. Sapozhnikov's Book "Bolshaya Akkarzha. Upper Palaeolithic Economy and Culture of the Ukrainian Steppe". – *Stratum plus* 1 (2003-04).
- Haesaerts, P., Borziak, I., Chirica, V., Damblon, F. & L. Koulakovska (2004), Cadre stratigraphique et chronologique du Gravettien en Europe Centrale. – In: Svoboda, J.A. & L. Sedláčková (Hrsg.), The Gravettien along the Danube. Brno (Archeologický ústav AV ČR). 33-56.
- Hahn, J. (1977), Aurignacien. Das ältere Jungpaläolithikum in Mittel- und Osteuropa. Fundamenta A/9. Köln & Wien.
- Păunescu, A. (1998), Paleoliticul şi epipaleoliticul de pe teritoriul Moldovei cuprins între Carpaţi şi Siret. – *Studiu monografic*, Vol. I/1. Bucurest (Ed. Satya Sai).
- Steguweit, L. (2007, in prep.), Testing the Aurignacian/ Gravettian transition in the Bistriţa Valley (NE-Romania). – *Volumes of the UISPP Congress, Lisbon 2006*. Colloquium C63.

Martin Street (Neuwied):

Late Palaeolithic settlement systems in the Central Rhineland.

The German Central Rhineland, in particular the Neuwied Basin, is the location of a number of late glacial archaeological sites which are exceptionally well preserved below tephra deposits erupted by the Laacher See volcano eruption some 13,000 years ago (11,000 BP). Sites are assigned to two distinct traditions. The Upper Palaeolithic Magdalenian is dated to around 13,000 BP (ca. 15,500 years ago) and represented by just two major settlements, Gönnersdorf and Andernach-Martinsberg, whereas Final Palaeolithic localities of the Federmessergruppen tradition are more numerous.

The transition from the Upper Palaeolithic to the Final Palaeolithic occurs at a time of considerable environmental change marked by the disappearance of the Pleistocene mammoth steppe

and the onset of reforestation. Whereas Magdalenian settlement falls towards the end of a cold and very dry phase immediately before the Late Glacial Interstadial, the Federmessergruppen sites date to the latter part of the Interstadial, which can be equated with the traditional Bølling / Allerød pollen zones. Associated fauna regularly indicates temperate woodland conditions and radiocarbon dates fall between 11,800 BP and 10,800 BP.

The wooded environment of the Federmessergruppen offered less overall animal biomass than the mammoth steppe inhabited by Magdalenian groups and this was no longer in the form of large herds of social animals (horse, reindeer, bison...) which could be efficiently exploited by extended cooperating human groups. Perhaps of critical importance, the reliable seasonal surplus presented by autumn agglomerations of reindeer had vanished. The change from open grassland conditions to wooded habitats and in available subsistence resources was accompanied by radical shifts in Palaeolithic material technology, the internal spatial organisation of settlements and the manifestation of artistic expression, which will be described below.

In the Central Rhineland the period between the well characterized phases of the Magdalenian and the Federmessergruppen is poorly understood. However, new ¹⁴C dates from Gönnersdorf and dated human remains and fauna from Bonn-Oberkassel and human remains at Neuwied-Irlich lie around 12,000 BP and suggest continuity of human presence at this time of transition.

Thorsten Uthmeier (Köln):

Foragers or Collectors? Neanderthal subsistence tactics in the Crimean Micoquian.

Any settlement pattern of hunter-gatherers results from the tactics of resource procurement. If the results of stable isotopes analyses are taken as an indicator for high percentages of hunting in Neanderthal subsistence pattern, than ethnographical data would suggest that Crimean Micoquian settlement patterns were characterized by a moderate number of long residential moves within large annual ranges, and low populations densities. But ethnographical data is not Palaeolithic reality, and it is far from being secure that this also accounts for southeastern European last interglacial and glacial environments, or for Neanderthal groups - which at least have to prove that they were able to act like complex hunter-gatherers. To examine the subsistence strategies of Palaeolithic hunter-gatherers, two models of resource acquisition help to formulate expectations that can be tested for their validity if compared to the archaeological data: foragers and collectors. Basically, logistical tactics applied by collectors lead to a higher number of site types that include residential camps and locations of foraging subsistence systems, plus field camps and field camps for special task groups as well as caches for food storage and the preparation of future stays in the same region. Foragers, to the contrary, return to their residential camp every night and, therefore, only have the latter plus locations. Thus, we have to expect a larger inter-site variability of sites of groups acting as collectors than in foraging systems. In addition, logistical collectors should search for large bulk of specific resources, leading to kill and butchering locations that are dominated by several individuals of the same species killed at the same event.

Comparisons between Crimean Micoquian sites and the features in the ethnographical models of subsistence strategies revealed the following:

1. Data coming from sites classified as stations speak for the existence of logistical tactics in the Crimean Micoquian. They are the remains of hunting stands and kill/butchering locations that produce "large bulk" of specific resources, e.g. horses, transported to the consumers, and/or stored. Other Crimean Micoquian stations were recognized as field camps.

2. Sites classified as residential camps give ambiguous information. While residential camps exist that speak for logistical strategies (consumption of specific resources transported over considerable distances), other camps speak for foraging tactics (extraction and consumption). Such foraging tactics seem to be independent of the availability of resources, since they were observed at sites visited during phases of abundance, like Buran-Kaya III, Level B/B1 and Starosele, Level 1, as well as at sites visited in times of dietary stress, like Chokurcha I, Unit IV.

The incompleteness of the archaeological data becomes apparent if chronology is compared to the expectations deduced from ethnographical models. Even if marine isotope stadiums are the shortest chronological entity analysed, the discontinuity of the Crimean Micoquian data becomes apparent. During MIS 5d, stations are the only class of occupation known. Since these were identified as field camps in a logistical subsistence strategy, it has to be assumed that residential camps and stations of different function existed. During MIS 5b, MIS 5a and MIS 4, the situation is similar: the corresponding camps to the kill and butchering locations are not yet located. It is only during MIS 5c and MIS 3 that a combination of stations and camps is documented in the archaeological record. On the other hand, if such a low chronological resolution is accepted as reflecting essential features of long lasting traditions, than the inter-site variability seen during MIS 3 can be taken as another argument for the hypothesis that Crimean Micoquian hunter-gatherers lived as collectors. This hypothesis is further strengthened by curated technologies reported, which again speak for a preparation for anticipated periods, rather than encountered subsistence strategies. Finally, a classification as collectors would also fit best to paleo-environment: from MIS 5 until MIS 3, open landscapes prevail.

Stefan Veil (Hannover), Klaus Breest (Berlin) & Pieter Grootes (Kiel):

¹⁴C-dating the assemblage with amber elk and pendant at the Federmesser site Weitsche, Lower Saxony (Germany).

= Zur ¹⁴C-Datierung des Befundes mit Bernsteinelch und -anhänger auf dem Federmessersfundplatz Weitsche, Niedersachsen (Deutschland).

ENGLISH: Between 1994 and 2004 an elk figurine, a pendant displaying abstract representations, a bead and fragments of amber have been discovered on the settlement area of the Late Palaeolithic Federmesser groups at Weitsche. The objects were found within a limited area with scattered stone artefacts and a small accumulation of cremated bones. So far, the dating was based on the typological attribution of the tool assemblage and some technical and stylistic comparisons of the art objects.

Recently a radiocarbon sample from the cremated bones yielded a late glacial age. It proves the bones belong to the camp site and dates it during the early Allerød around 14000 CAL BP. Together with the known animal figurines of Woldenberg and Oberkassel the elk sculpture points to the existence of a hitherto unknown “art province” in the Late Palaeolithic of northern Central Europe with naturalistic animal sculptures differing clearly from the Backed Point Complexes in west and south Europe (like the Azilian s.s. or the Epigravettian). The new find questions the idea all hunting groups had abandoned their naturalistic animal art by the end of the Ice age.

The amber finds of Weitsche follow the art of the Magdalenian resp. Hamburgian and may be regarded as predecessors of the amber animals and pendants in the Mesolithic of the west Baltic area.

DEUTSCH: Auf dem spätpaläolithischen Siedlungsareal der Federmessergruppen bei Weitsche wurden zwischen 1994 und 2004 eine Elchfigur, ein Anhänger mit abstrakten Darstellungen, eine Perle sowie Fragmente aus Bernstein gefunden. Sie lagen in einer begrenzten Streuung von Steinartefakten mit einer kleinen Anhäufung verbrannter Knochen. Die Datierung dieses Lagerplatzbefundes beruhte bislang auf der typologischen Einordnung des Steinwerkzeuginventars und dem technologisch-stilistischen Vergleich der Kunstobjekte.

Nun ergab eine ¹⁴C-Probe der verbrannten Knochen ein späteiszeitliches Alter. Es belegt ihre Zugehörigkeit zum Lagerplatz und datiert diesen in das frühe Allerød um 14000 CAL BP.

Gemeinsam mit den bekannten Tierfiguren von Woldenberg und Oberkassel deutet die Elchfigur auf die Existenz einer bisher unbekannten spätpaläolithischen „Kunstprovinz“ im nördlichen Mitteleuropa hin, die sich mit ihren naturalistischen Tierkulpturen von den übrigen Rückenspitzen-Gruppen West- und Südeuropas (u. a. Azilien s.s., Epigravettien) unterscheidet. Sie relativieren die Vorstellung, alle Jägergruppen hätten mit dem Ende der Eiszeit ihre naturalistische Tierkunst aufgegeben.

Die Weitscher Bernsteinfunde folgen auf die Kunst des Magdalénien bzw. der Hamburger Kultur und kommen als Vorläufer der Bernsteintiere und -anhänger des Mesolithikums im westlichen Baltikum in Frage.

Philipp Woerx (Tübingen):

The Aurignacian of the Grotte du Figuier (Ardèche, France) in its archaeological context.

The Grotte du Figuier (Ardèche, France), an important Middle and Upper Palaeolithic cave site, is situated in the south-east of France, in the lower parts of the Ardèche canyon and in the neighbourhood of the Grotte Chauvet. Jean Combier presented the site in a monographic manner within the framework of a comprehensive study in the late 1960s (COMBIER 1967). In analysing level 2 he faced certain problems; still he could treat it as an Aurignacian. Having only a small set of stone artefacts and no points of reference in the region itself, he was compelled to remain rather cautious in his interpretations. Thus he merely classified the assemblage as a “developed Aurignacian” (« Aurignacien évolué »).

Taking Jean Combier’s work and thoughts as a starting point, this study attempts to reconsider and narrow down this classification. For the re-analysis of the stone artefacts, however, only a fraction of the original material was available. Yet, crucial new insights could be gained from the finds recovered from wet screening the excavation dump, which was examined in the 1970s. By way of a technological approach to this small section of the stone artefacts from level 2 combined with typological observations and considerations, some evidence could be found pointing to the presence of bearers of the Protoaurignacian in the Grotte du Figuier. Building up on Jean Combier’s considerations referring to level 2, this occupation of the cave seems to have been the only one during the Aurignacian. Comparison with further sites of the Protoaurignacian shows that the data of the Grotte du Figuier fits convincingly into the regional context.

This research, first of all as a contribution to the understanding of the Aurignacian of the Grotte du Figuier, ventures to raise further questions about the Protoaurignacian and Aurignacian in the south-east of France and beyond.

Reference:

COMBIER J. (1967), *Le Paléolithique de l’Ardèche dans son cadre paléoclimatique*. – Bordeaux, Imprimerie Delmas, 462 p. (Publications de l’Institut de Préhistoire de l’Université de Bordeaux 4).

Kurzfassungen der Poster (*Poster Abstracts*)

Nicholas Barton (Oxford), Abdeljalil Bouzouggar (Rabat), Simon Collcutt & Tom Higham (Oxford), Louise Humphrey (London), Edward Rhodes (Canberra), Jean-Luc Schwenninger (Oxford) & Elaine Turner (Nennied):

Results of new investigations of the Middle and Upper Palaeolithic occupation of Grotte des Pigeons, Taforalt (Morocco).

Northern and Eastern Morocco is a region of key interest for the understanding of human evolution and behavioural development. Its caves provide not only some of the richest sources of archaeological and human fossil evidence in Northwest Africa, but also contain finely-stratified sequences with exceptionally well-preserved organic remains. But despite the potential of the sites, many are poorly or incompletely dated and very little has been published on the palaeoenvironmental context of their finds.

Recently, new projects have been initiated which seek to redress this situation by excavating and sampling key sites in order to understand the chronology of the Middle and Upper Palaeolithic of the Maghreb and to provide the palaeoenvironmental background to the human occupation of the region during these periods.

One of the key sites for eastern Morocco is Grotte des Pigeons at Taforalt, situated near the border with Algeria. The cave was discovered in 1908 and excavations were undertaken in 1944-47 and between 1950-55 and 1969-77. Up to 10 m of cave-fill deposits containing archaeological levels with Aterian (Middle Palaeolithic) artefacts overlain by levels containing typical Iberomaurusian (Upper Palaeolithic) industries were uncovered. Two burial zones were also identified from which the remains of over 180 human individuals have been reported. This evidence marked Taforalt as one of the richest Upper Palaeolithic cemeteries in North Africa.

The poster presents the results of current excavation and sampling. Beginning in 2003 and aiming to obtain new dating and palaeoenvironmental evidence, these investigations have produced well over 40 AMS radiocarbon determinations, OSL, TL and U-series dates from horizons spanning the Middle and Upper Palaeolithic. Although ongoing, this work has already provided one of the longest dated sequences for these periods in the Maghreb.

In addition preliminary results from the analyses of faunal and botanical remains are beginning to provide a palaeoenvironmental background to the chronological developments. Evidence has been produced of the exploitation of animals, particularly Barbary sheep, by the Middle and Upper Palaeolithic occupants of the cave. Finally, undisturbed human burials at the rear of the cave associated with the remains of butchered animals provide a unique opportunity to study various aspects of the lifestyles of Upper Palaeolithic humans, from their hunting tactics to their mortuary practices.

Stefano Bertola, Alberto Broglio, Mirco De Stefani & Fabio Gurioli (all Ferrara), Antonio Tagliacozzo (Roma):

Landscape exploitation at the beginning of Upper Palaeolithic: the example of Broion Shelter (Berici Hills, Vicenza).

The Berici Hills are located in northern Italy, south of Vicenza. They reach an altitude of 444 meters a.s.l. The cave opens at 135 meters in the eastern hillside where there are numerous other caves and shelters of karstic genesis. In the surroundings of the site (within a radius of 1,0 – 1,5 km) there are three well differentiated environs: the upper karstic plateau, the rocky steep slopes which delimit like an amphitheatre the foothill plane and the alluvial bottom plain with fine sediments interposed with swampy areas fed by karstic springs. In the 1g and 1f subunits of the Broion Shelter

some Aurignacian lithic artefacts were found: 5 dates ^{14}C done on this stratigraphic levels give ages within 32.000 and 30.000 years BP non cal.

A group of modern humans occupied the shelter during the interval of Arcy, leaving two living structures (a fireplace bordered by big stones and a lens of ash), evidences of flint flaking and bones with butchering striae. The Aurignacian hunters exploited the wide faunal range located around the site. Together with wild boar (the most common specie), red deer, roe deer (wooded areas markers), we find marmot, hare, chamois, ibex and bovids (open lands markers). Elk, beaver, pike, mallard and teal area linked to damp environments.

Two different areas of flint provenance have been identified, one situated east and the other situated west to the shelter. The nearest flint outcrops are about 8 km far in the south-east direction, at the feet of Berici Hills. Wider outcrops are present more to the east (about 12 km) in the hills interposed between the Berici Hills and the Euganei Hills and in the Euganei Hills (about 20 km). Other flints agree with the outcrops of the central part of the Lessini Mountains (about 40 km far to the west). Most of flints come from Berici – Euganei area. The only samples coming from long distance (probably around 100 km) are represented by three marine shells, belonging to the specie *Dentalium inaequicostatum*.

Knut Bretzke, Felix Hillgruber, Nicholas J. Conard (all Tübingen):

Land Use and Climatic Change in the Middle and Late Pleistocene of Western Syria.

Since 1999 the *Tübingen Damaskus Ausgrabung und Survey Projekt* has documented of 421 Stone Age localities from diverse topographic settings over a roughly 100 km² region centered around the town of Ma'aloula, ca 50 km northeast of Damascus. These localities include over 640 archaeological components ranging in age from the Lower Paleolithic to the Neolithic. The sites range in elevation between 800 and 2350 meters above sea level. As far as we are aware this is the largest set of Paleolithic survey data from the southwestern Asia. These data allow us to study diachronic changes in the spatial distribution archaeological sites in the Ma'aloula region during the Middle and Late Pleistocene. Using the paleoclimatic data from Soreq Cave near Jerusalem, 120 km south or the our study area, we can examine the extent to which climatic conditions and past levels of precipitation dictated the density of archaeological occupation and set limits on the scope and intensity of Paleolithic occupation. The distribution of sites indicates similar patterns of land use from the Lower Paleolithic to the Upper Paleolithic. Only with the Epipaleolithic, do we see expansions into more remote areas of high elevation as well as low-lying areas. While some aspects of the distributions of sites are determined by patterns of erosion, deflation and archaeological visibility, the dramatic changes in the spatial distribution of sites, after the Upper Paleolithic appear to reflect the meaningful changes in human adaptations. These changes probably reflect changing adaptive strategies that in part are driven by a mixture of changing economic behavior and climatically based causality.

Doris Döppes (Darmstadt) & Wilfried Rosendahl (Mannheim):

Numerically dated palaeontological cave sites of Central Europe from Late Middle Pleistocene to Early Upper Pleistocene – a critical review.

Caves are terrestrial depositories that preserve a large variety of organic and inorganic remains. These may contain important Quaternary climatic and ecological information. Most of the faunal remains, however, cannot be linked to any interglacial or glacial period exclusively. Reliable dating of such remains is therefore required. Experience has, however, shown that ESR dating of speleothems or $^{230}\text{Th}/\text{U}$ dating of bones are of disputable value. Only TIMS- $^{230}\text{Th}/\text{U}$ dating of speleothems appears to yield reliable ages. Dating the bottom and top of speleothem layers permit as-

signing Pleistocene faunal remains to the OIS chronology if the deposition of the speleothems and the faunal remains are clearly correlated. Care must be taken to consider the depositional situation of each site before interpreting any age dates.

A total of 25 strata were dated from 13 sites, most of them deposited during OIS 5; the rest belonging to OIS 6 and 7. Numerically dated palaeontological sites older than OIS 8 are not known.

The numerical dates of palaeontological sites in Central Europe now available do not allow – with the exception of Biśnik Jaskinia and the Repolusthöhle – a critical discussion of their faunal assemblages as to their ecological-climatic distribution. But even those two sites are not without contradicting faunal elements and it remains doubtful if they represent either Glacial or Interglacial faunas. The flowstone dating of the sites Grotte Scladina, Hunas, Herdengelhöhle and Schwabenreith-Höhle yielded plausible minimal ages for their faunal elements. At the Schwabenreith-Höhle the cave bear bones are in between two dated flowstone layers. In this particularly case the fauna between these dated layers represents a certain time range and a mixing with younger and older remains can be excluded. Some layers of the sites Grotte Scladina, Vindija and Krapina were dated with different dating method ($^{230}\text{Th}/\text{U}$, ESR and TL) for comparison.

In spite of all these problems, palaeontological cave sites represent a rich archive that can contribute significantly to the reconstruction of the Middle and Upper Pleistocene palaeoclimate of Central Europe, provided many additional dates can be obtained to verify results obtained from other terrestrial archives.

Reference:

Rosendahl, W., Döppes, D. & Kempe, S. (2007): OIS 5 – OIS 8 – Numerically dated palaeontological cave sites in Central Europe. – In: Sirocko, F., Claussen, M., Sánchez Goñi, M.F., Litt, T. (eds.): The climate of the past interglacials. – Developments in Quaternary Science 7: 455-470; Elsevier, Amsterdam.

Sven Feldmann (York):

Mesolithic Miscellany - Building an information-platform.

Archaeologists working on the same area of research have always felt the need for fast and easy communication. In 1980 Douglas T. Price started a small informal newsletter for the Mesolithic research community to address this need: the Mesolithic Miscellany. Published twice a year this means of communication survived until 1996. After ten years of inactivity Nicky Milner decided to re-launch the Mesolithic Miscellany - this time in electronic form.

As a first step, all past volumes were made available via internet with the help of the Archaeology Data Service (ADS) at York. Then the question was how to publish the new Mesolithic Miscellany via internet? Was it more advantageous to stick as close as possible to a print-publication or to make use of all the internet can possibly offer?

This poster introduces the new Mesolithic Miscellany newsletter, explains how it works, reveals our plans for the future and looks for co-researchers eager to contribute.

Daniela Festi (Innsbruck/ Trento), Maria Letizia Filippi, Giampaolo Dalmeri (beide Trento), Klaus Oegg (Innsbruck):

Palaeo-ecological studies of the Palù Echen mire (Folgaria, NE Italy): preliminary results.

Palù Echen is a mire located on the Folgaria Plateau (Province of Trento, NE Italy) at 1256 m a.s.l. Preliminary archaeological excavations, conducted in 2004 and 2005 by the Museo Tridentino di Scienze Naturali, have unearthed a partially conserved Epigravettian site at the waterside north-east

of the former lake (Dalmeri *et al.*, 2005). A first coring campaign has highlighted the presence of a detrital to carbonatic lacustrine sequence, more than 5 m thick, that started earlier than 14-15000 years BP (Filippi *et al.*, 2005).

Following this initial survey, this paleoenvironmental research is conducted to reconstruct the palaeo-vegetation and past climatic changes in the area of Palù Echen. In autumn 2006, two additional sediment cores were extracted from the marginal and central parts of the mire for pollen, plant macro remain and sediment analyses. The cores have revealed a stratigraphy encompassing the termination of the last Glacial and the onset of the Holocene, a period of rapid climate and vegetation changes. The analyses will supplement the archaeological studies and support the understanding of the interrelationship between human occupation and former environment. Preliminary results of the palynological and sedimentological analyses are given.

References:

- Dalmeri G., M., Bassetti, A. Cusinato., K. Kompatscher & M. Hronzy Kompatscher, 2005 – Nota breve – la frequentazione umana a Palù Echen (Folgaria, Trento) alla fine del tardiglaciale. Nota sul saggio di scavo nel sottore 1. *Preistoria Alpina*, 41 : 147-151.
- Filippi M.L., G. Dalmeri, A. Cusinato & M. Bassetti, 2005 - Nota Breve - Studi sulla sequenza lacustre-palustre di Palù Echen (Altopiano di Folgaria - Trento). *Preistoria alpina*, 41: 153-7.

Maria Letizia Filippi, Silvia Frisia, Nicola Angeli (all Trento), Enrico Arpentì (Milano), Oliver Heiri, Klaas van der Borg (both Utrecht), Simon Blockley (Oxford):

Lake Lavarone Late-glacial to present palaeoenvironmental changes: a unique multi-proxy record from Trentino, NE Italy.

The Alps are a key region to understand the interaction between the Northern European climate trends and the effects of the Mediterranean during climatic transition periods. However, paleoenvironmental and palaeoclimatic multi-disciplinary studies on continuous Late Glacial to Holocene continental sequences are still relatively rare for the Southern watersheds of the Alps. The OLOAMBIENT project (2003-2006, funded by the Autonomous Province of Trento) aims at reconstructing climate fluctuations and environmental responses for this period in the Trent region (Dolomites, NE Italy) by combining lake sediment and speleothem archives. The sediment sequence retrieved from Lake Lavarone was selected for a multi-proxy study, including radiometric, sedimentological, mineralogical, geochemical, palynological and biological (diatoms, chironomids) analyses.

Lake Lavarone (0.05 km² large, 17 m deep, 1100 m a.s.l.) is a nice small karstic lake, a local tourist attraction, with almost permanently anoxic bottom waters. The ca. 10 m-long sediment sequence collected in the deepest part of the basin, has been divided in 4 lithostratigraphic units. The upper three units (first ca. 5.5 m) have good chronological constraints through ²¹⁰Pb dating of the uppermost section of the core and 20 radiocarbon dates. The lower unit, is characterized by organic-poor, light- to dark-grey bedded silty clay with intercalated mm- to cm-thick sandy layers and records the transition from a recently deglaciated environment (17-18000 yr BP?), characterized by a high detrital sedimentation rate, low organic content and steppe vegetation, to the first afforestation, which took place in the “Bølling-Allerød” period, and led to an increase in total organic carbon content of the sediment. The Younger Dryas (Unit III) is marked by a distinct increase in xerophytes and decrease in July temperature, as reconstructed from selected chironomid samples. Unit I and II (upper ca. 5 m) vary from a bedded and partly laminated brown sapropelic diatomaceous and carbonate-rich ooze at the top, to a homogeneous to vaguely laminated reddish brown mud with abundant plant remains. This section shows the characteristic Holocene pollen sequence, with clear human presence on the site dating to the Roman age. Catchment and productivity changes determine the presence/absence of endogenic calcite in the sediment, an indirect indicator of changes in the ecosystem of lake.

Ongoing microtephra analyses focus on the lower units (III and IV) and will likely help constrain the timing of deglaciation and the beginning of afforestation in the region.

Sabine Gaudzinski-Windbeuser, Lutz Kindler (both Neuwied), Rivka Rabinovich & Naama Goren-Inbar (both Jerusalem):

The Role of Hominin and Natural Agents in the Formation of Striations and Cut-marks on Bones at the Acheulian site of Gesher Benot Ya'aqov, Israel.

The Israeli site of Gesher Benot Ya'aqov represents one of our very rare archives where the behaviour of our earliest Eurasian ancestors 800.000 years ago can be studied. Numerous analyses of diet (Goren-Inbar et al. 1994, Goren-Inbar et al. 2001), the stone tool repertoire and technology (Goren-Inbar and Saragusti 1996, Sharon and Goren-Inbar 1999, Madsen and Goren-Inbar 2004, Goren-Inbar and Sharon 2006) and the control of fire (Goren-Inbar et al. 2004) have already been presented. These analyses bear witness to hominins efficient and elaborate exploitation of the various resources available.

Gesher Benot Ya'aqov is characterised by an excellently preserved faunal assemblage allowing studies of anthropic and non-anthropogenic bone surface modifications. Here we present results on formation processes of the faunal assemblage from the site obtained by actualistic studies on bone surfaces showing that the various elements of the archaeological assemblages have been deposited and buried contemporaneously. These results are discussed in a broader context.

References:

- Goren-Inbar, N., Alperson, N., Kislev, M.E., Simchoni, O., Melamed, Y., Ben-Nun, A., Werker, E., 2004. Evidence of Hominin control of fire at Gesher Benot Ya'aqov, Israel. *Science* 304, 725-727.
- Goren-Inbar, N., Lister, A., Werker, E., Chech, M., 1994. A butchered elephant skull and associated artifacts from the Acheulian site of Gesher Benot Ya'aqov, Israel. *Paléorient* 20, 99-112.
- Goren-Inbar, N., Saragusti, I., 1996. An Acheulian biface assemblage from the site of Gesher Benot Ya'aqov, Israel: indications of African affinities. *J. Field Archaeol.* 23, 15-30.
- Goren-Inbar, N., Sharon, G., Melamed, Y., Kislev, M., 2001. Nuts, nut cracking, and pitted stones at Gesher Benot Ya'aqov, Israel. *Proc. Natl. Acad. Sci. USA.* 99, 2455-2460.
- Goren-Inbar, N., and G. Sharon. 2006. Invisible Handaxes and Visible Acheulian Biface Technology at Gesher Benot Ya'aqov, Israel. Pp. 111-135. *In* N. Goren-Inbar, and G. Sharon, eds. *Acheulean Handaxes and Cleavers, from Quarry to Discard*. Equinox, London.
- Madsen, B., Goren-Inbar, N., 2004. Acheulian giant core technology and beyond: an archaeological and experimental case study. *J. Eurasian Prehist.* 2, 3-52.
- Sharon, G., Goren-Inbar, N., 1999. Soft percussor use at the Gesher Benot Ya'aqov Acheulian site? *J. Israel Prehist. Soc.* 28, 55-79.

Ulrich Hambach (Bayreuth), Leif Stegmann (Erlangen) & Mircea Anghelina (Targoviste, RO):

Inter-profile correlation of Upper Palaeolithic archaeology bearing loess sequences from the East Carpathians (Romania) – Results from ongoing rock and palaeomagnetic investigations.

Loess sequences from the Bistrița Valley (NE-Romania) contain Aurignacian, Gravettian and Epi-Gravettian cultural layers. During field campaigns 2005 and 2006, three sections were studied in the frame of an interdisciplinary geo-archaeological project (Bistricioara-Lutari-I and Ceahlău-Dârțu in the Râpciuni Basin and Poiana Cireșului 60 km downstream near Piatra Neamț (Cârciumaru et al.

2006, Păunescu 1998). These sections were sampled for rock and palaeomagnetic investigations in order to establish an inter-profile correlation scheme and to back litho- and pedostratigraphic approaches.

Magnetic properties of sediments and soils are nowadays widely used in Quaternary and palaeoclimatic research to characterise the palaeoenvironment and to date indirectly sedimentary sequences. Wind blown dust was deposited worldwide during the cold/dry periods of the Pleistocene. It undergoes pedogenesis when more humid conditions predominate, which is reflected in physical-chemical alteration of the sediment. These alterations result also in the enhancement and transformation of magnetic minerals (Dalan & Banerjee 1998). Therefore, magnetic parameters as function of depth can serve as a proxy for palaeoclimatic variations allowing for inter-profile correlation and provide a close match with all kinds of high resolution palaeoclimatic archives.

The up to 8 meters thick loess piles from Bistrița Valley are build up from dark yellowish to light brownish limy silt, which exhibits occasionally weak interstadial soil horizons. Each section terminates with a strongly developed palaeosol (gelistagnic cambisol) indicating wet Tundra-environment with strong seasonal contrasts during the late glacial. This palaeosol is covered by carbonate-free, relatively coarse grained yellowish loess.

The magnetic susceptibility (MS) logging matches perfectly the lithologic and pedostratigraphic units. Low values go along with unaltered loess and carbonate-free intervals whereas high values correspond to pedogenitically overprinted horizons indicating enhancement of ferromagnetic minerals during pedogenesis.

The inter-profile correlation based on MS logging yields a detailed stratigraphic match and corroborates well the pedostratigraphy as well as an age frame based on recently obtained radiocarbon dates. These dates range from 31 ka ¹⁴C BP at the base of the section at Ceahlău-Dârțu to about 20 ka ¹⁴C BP just below the gelistagnic cambisol at Poiana Cireșului.

Based on these results we propose the following tentative chronostratigraphy: Loess sedimentation in the area started latest at about 35 ka on terraces of the Bistrița and continued until the Bølling/Allerød Interstadial. Minor MS peaks in the loess may be attributed to favoured climatic phases corresponding to the Greenland Interstadials younger than Denekamp and older than Bølling/Allerød (GI 2 to 7). The overlaying loess layer presumably represents the climatic relapse of the Younger Dryas ending at 11.5 ka.

Results from still ongoing palaeomagnetic investigations will hopefully provide additional and independent correlation and dating control.

References:

- Cârciumaru, M., Anghelinu, M., Steguweit, L., Niță, L., Fontana, L., Brugere, A., Hambach, U., Mărgărit, M., Dumitrașcu, V., Cosac, M., Dumitru F. & O. Cârșina (2006), The Upper Paleolithic site of Poiana Cireșului – Piatra Neamț (North-Eastern Romania). Recent results. – *Archäologisches Korrespondenzblatt*, 3, 319-331.
- Dalan, R. A. & Banerjee, S. K. (1998), Solving Archaeological Problems Using Techniques of Soil Magnetism. – *Geoarchaeology: An International Journal*, 13, 1, 3–36.
- Păunescu, A. (1998), Paleoliticul și epipaleoliticul de pe teritoriul Moldovei cuprins între Carpați și Siret. – *Studiu monografic*, Vol. I/1. București (Ed. Satya Sai).

Saman Heydari, Elham Ghasidian & Nicholas J. Conard (all Tübingen):

What impact did geomorphological factors have on early human dispersal in Iranian Plateau?

The Iranian Plateau covers a vast area (1,648,195 km²) which is occupied by a moderately elevated interior basin bounded by high mountain systems along its north and southwest margins. Within the interior basin of Iran, several lesser mountain chains enclose extensive desert plains and playas. The northern chain, the Alborz (Elburz), represents a north branch of the Alpine-Himalayan oro-

genic system, separating the Caspian Lowland from the Central Iranian Plateau. The Iranian Plateau is divided into several parallel geomorphological zones that contain different ecosystems. Except for the Alborz mountains, which run east to west in the northern section of the Iranian Plateau, these parallel zones run from the northwest to the southeast of the plateau. The Paleolithic site distribution in the Iranian Plateau coincides with these geomorphological zones as follows:

1- Zagros Mountains (thrust and folded zone): Most parts of the Zagros mountains consist of karst topography which contains many caves and rockshelters. Archaeological evidence shows that many of these geomorphological settings were used by early humans in the Late Pleistocene.

2- Urumiyeh –Dokhtar volcanic belt: Many travertine and tufa formations have been formed by hot springs along the Urumiyeh –Dokhtar belt. Several Paleolithic sites were discovered on these features in the past two decades, suggesting that travertine and tufa formations were attractive places for occupation during the Paleolithic.

3-Central –East Iranian Desert and sand dunes: The interior parts of the Iranian Plateau consist of desert and sand dune areas which are geomorphologically and climatologically similar to northern Africa and the savanna. Many Paleolithic sites were located among the dunes of the Iranian Central Plateau, showing that early humans were active in these geomorphological settings during interglacial periods.

Inga Kretschmer (Köln):

Hunting and raw material Procurement Among late Neanderthals IN Crimea (Ukraine): Kabazi II, Unit II, Level 7AB.

Kabazi II is a Middle Paleolithic open air site, located in the western part of the Crimean Mountains (Crimea/Ukraine), which has been subject to excavations since 1986 by the Ukrainian Academy of Sciences. Within the framework of the project “Funktionale Variabilität im späten Mittelpaläolithikum auf der Halbinsel Krim, Ukraine”, funded by the Deutsche Forschungsgemeinschaft (DFG), chipped stone assemblages from Kabazi have been investigated in an attempt to ascertain the function of the site, considering such variables as raw material sources, as well as blank and tool production. This information highlights such factors as Neanderthal subsistence strategies and local land use patterns, characterised by a complex system of mobile human groups with camp sites and short-term stations, during the Late Middle Paleolithic.

This paper presents the results of a transformation analysis of the artefacts from Kabazi II, Unit II, Level 7AB conducted within the framework of my M.A. thesis at the University of Cologne. The analysis of the inventory, including the faunal remains, shows that the Neanderthals made only a short stop at Kabazi II in this level, during which they made use of nearby resources. Kabazi II was not only a perfect location for hunting, but a nearby flint outcrop provided access to good quality raw material for blank and tool production.

Anna Lunardi (Siena):

Grinding Stones and polished stone axes: Experimental research in the Adige Valley.

The experimental research presented herein regards the reproduction of the operations which led to the transformation of raw materials into manufactured stone tools. In particular, are presented the experimental analysis about two important Neolithic tool types: the polished stone axes and the grinding stones. The analysis is divided in three phases: the first phase is the choice of the rocks suitable for the implements; the second phase consists of the technological modifications of the lithic supports to prepare the working surfaces and the third phase regards the use of the tools to carry out various tasks (i.e. cutting wood, pointing branches and felling trees for the axes or grind-

ing cereals and minerals for the grinding stones). The results show that the choice of the raw material is the key factor to obtain the best functional performances and rheologic responses of the tools.

Hannes Napierala (Tübingen):

New results on the Magdalenian fauna of Kesslerloch Cave, Switzerland.

Kesslerloch Cave was excavated in three campaigns around the turn of the 19th/20th century in which extraordinary pieces of art were discovered. Hugo Obermaier himself took part in the discussion about the authenticity and the antiquity of the finds. All finds seem to belong to the Late Glacial, the earliest ones belonging to the immediate recolonisation after the LGM. This new study aims at analysing the rich faunal assemblage with modern methods. It shows that old excavations still hold much potential for new knowledge. Despite the common large game species, many thousand bones of arctic hare (*Lepus timidus*) and several other small game species provide us with new details about magdalenian subsistence. Among the finds are also remains of a domestic dog and a Cave bear, which will soon be directly dated.

Martina Pacher & Markus Fiebig (both Vienna):

Late Pleistocene Human Occupation and Ice Development in the Eastern Alps.

Human and faunal occupation of the Eastern Alpine area is closely related with climatic conditions throughout the Last Glacial cycle. Given the altitude of certain sites, ice-free conditions are a prerequisite for the visit of a distinct cave. Thus far, the maximum ice extent during the Last Glacial Maximum (LGM) is reconstructed (van Husen 1987) but neither reconstructions of previous ice extents nor a clear succession of warm climatic conditions with human/faunal evidence and cold climatic conditions with ice cover has been attempted (Fiebig & Pacher submitted).

Evidence of Late Pleistocene human remains in the high Alps is suggested from Neanderthals and modern humans. Neanderthal evidence is scarce and closely related to the first scientific investigations of Alpine cave sites. Thus, several small untypical lithic assemblages (eg. Ramesch-Knochenhöhle, Herdengelhöhle, Salzofenhöhle) have been traditionally determined as Mousterian but the proposed visit of Neanderthals in high Alpine caves clearly needs to be re-examined. Early modern humans are often identified by the presence of bone points and are proved for several sites by direct dates on the points (e.g. summary in Pacher in press). The cultural assemblages in the Alps are generally small (eg. Lieglloch, Drachenhöhle) with exception of the rich site Potočka zijalka, Slovenia (Pacher et al. 2004).

The environment of the Eastern Alpine area during the Last Glacial cycle is not well known yet. The large mammal assemblage of the Alps during MIS 3 seemed to be rather restricted with a preponderance of cave bear and few carnivorous species. Thus far, ungulates are not proved which is probably based on a lack of investigation.

Paleoenvironment reconstructions so far are based on faunal evidence, pollen analysis from Alpine cave sites and speleothems (eg. Hille & Rabeder 1986, Rabeder 2000, Spötl et al. 2006). Data are restricted by recovery techniques, biased samples, uncertain stratigraphical correlation between finds. Therefore different climatic conditions are suggested ranging from very cold to rather mild or even Interglacial conditions based on cave bears and pollen at Alpine and Perialpine sites (Dresscher-Schneider 2000, Preusser 2004, Patzelt 2002, Rabeder 2000).

A comprehensive approach that combines for the first time faunal evidence and glacier fluctuation at particular sites is necessary in order to achieve a well-based chronology of periods with human/faunal evidence and colder periods with glacier increase in the Eastern Alpine area.

References:

- Drescher-Schneider, R. (2000): Die Vegetations- und Klimaentwicklung im Riß/Würminterglazial und in Früh- und Mittelwürm in der Umgebung von Mondsee. Ergebnisse der pollenanalytischen Untersuchungen. Mitt. Komm. Quartärforsch. Österr. Akad. Wiss. 12: 39-92.
- Fiebig, M. & M. Pacher (submitted): Alpine cave bear and climate in Marine Isotope Stage 3. Proceedings 12th ICBS, Loutra-Aridea. Scientific Annals Aristotele University, Thessaliniki.
- Hille, P. & G. Rabeder (1986): Die Ramesch-Knochenhöhle im Toten Gebirge. Mitt. Komm. Quartärforsch. Österr. Akad. Wiss. 6:1-77,
- Husen v D (1987): Die Ostalpen in den Eiszeiten, Populärwiss. Veröffentl. d. Geol. Bundesanstalt, p.24.
- Pacher, M. (in press). Late Pleistocene Human Occupation and Large Mammal Distribution in the Eastern Alpine Region. In: Grimaldi, St. & T. Perrin (eds.). Mountain environments in pre-historic Europe: settlement and mobility strategies from the Palaeolithic to the early Bronze Age. Proceedings XVth UISPP Congress, Lisbon.
- Pacher M, Pohar V, Rabeder G, eds. (2004): Potočka zijalka – paleontological nad archaeological results of the excavation campaigns 1997-2000, Mitt. Komm. Quartärforsch. Österr. Akad. Wiss. 13, Wien.
- Patzelt, G. (2002): Revision der alpinen Hochwürm- und Spätglazial- Chronologie nach kalibrierten Radiokarbondaten. Festkolloquium zu Ehren prof. Dr. Dirk van Husen, Geol.Bundesanstalt, p.2, Wien.
- Preusser F (2004): Towards a chronology of the Late Pleistocene in the northern Alpine Foreland, Boreas 33, 195-210.
- Rabeder, G. (2000): Höhlenbär und Klimageschichte. In: Rabeder G, Doris N, Pacher M (2000): Der Höhlenbär. Species 4: 74-78, Thorbecke Verlag, Stuttgart.
- Spötl, C., Mangini, A. & D.A. Richards (2006): Chronology and paleoenvironment of Marine Isotope Stage 3 from two- high-elevation speleothems, Austrian Alps. Quatern. Sci. Rev. 25: 1127-1136.

Marco Peresani (Ferrara):

Flint, caches and the circulation of implements among the hunter-gatherers of North-Eastern Italy.

Studies carried out during the last decade on Late Epigravettian and Early Mesolithic sites in North-eastern Italy have provided by means of petrographical and geochemical analyses new detailed information concerning flint, its provenance and utilisation. Investigations about sources, provisioning techniques and circulation of flint cobbles or their end-products in the region extending from the inner Eastern Italian Alps to the Venetian-Friulian Plain are thus giving a significant contribution to the reconstruction of the adaptation strategies adopted during the late-glacial and the post-glacial, when climatic amelioration favoured human peopling of mountain regions. Except for a few small areas, fine grained and compact flint is generally widespread in the Eastern Pre-Alps. Nevertheless, raw materials were accessible only for some areas where basin palaeogeography and tectonic conditions influenced flint abundance and properties.

This relative abundance in lithics supported the peopling process and drew human groups more in some territories than in others occupying several sites including also lithic workshops. Assemblages and their flint variability indicate circulation of raw material intra- and inter- catchment territories and are powerful mean to investigate needs, anticipation and economy.

Examples of rare and particular expressions concerned with this aspect of human behaviour will be described in the poster: two caches with flint cobbles are here described and discussed in relation to their cultural, paleoenvironmental and functional context.

Marco Peresani, Rossella Duches, Fabio Gurioli & Matteo Romandini (all Ferrara):

The Clusantin Cave and the specialised hunting and processing of marmots during the Epigravettian in Italy.

Grotta del Clusantin is a small cave at 520m altitude in the Pradis Plateau, a modest physiographic unit of the Carnic Pre-Alps set among limestone mounts elevated at 1,200-1,400 m. The cavity contains an epigravettian level extensively excavated in 2005 and dated at 12ka Cal ¹⁴C B.C. which records exclusive anthropic occurrences at the cave entrance, the more comfortable area than the narrow and geologically unstable inner sectors. Field investigation has not revealed evidence for supporting the same area was also used by animals.

From the field evidence and the archaeozoological study carried out on the small mammal assemblage, it results that the almost exclusively represented taxa is *Marmota marmota* which remains bear butchering striae usually associated to modifications due to combustion and calcination. Spatial distribution and scattering of humanly modified marmot bones are congruent with the geometric and pedo-sedimentologic features of the anthropic unit and thus provide evidence of human exploitation. This mammal is represented by different individuals among which cubs prevail.

Predation and processing of *Marmota marmota* addressed to retrieve food, fur and grease seem to have been the main activity carried out at Grotta del Clusantin. Given the palaeoecological and chronological data, this site marks one of the first phases of Epigravettian peopling the Eastern Italian Alps. Ethological comparisons suggest that predation occurred from July and August as a specialized task in an open wooded environment.

Marco Peresani (Ferrara), Mara Silvestrini (Ancona), Emanuele Cancellieri (Ferrara):

The peopling of the Marche Appennine during the Late-Glacial.

The poster describes the circumstances surrounding the peopling of the Marche region in ecological and anthropic terms and depicts the evolution of a late-glacial settlement system. Data about settlement system remain, in the present state of knowledge, scarcely represented, mostly due to the lack of specific surveys and insufficient palaeoecological, archaeozoological and techno-economical data.

The multifaced landscape of the Marche Appennine, made of wide valley plains, narrow calcareous gorges, high crests and low wet environments, reveals the traces of Epigravettian frequentation between the Last Glacial Maximum and the end of the Late Glacial.

As far as the first human occupation of the Eastern side of the Appennine chain is concerned, more exactly, the fluvial terraces of the valley mouthes, available data is not sufficient in order to make hypotheses about the camp function and the way this camps worked, nor to test if they were ephemeral occupations (ex. Grotta del Vento-Grotta del Fiume) or testify of a range of activities such as lithic implements production (ex. Baracche) along with other subsistence activities.

On the other hand, in The Late Glacial interstadial we observe a development in the settlement system, which, even if documented only in the Esino basin, it could reveal logistically complementary settlements of the principal sites of the Rossa and Sentino gorges, used for specific tasks (Riparo di S. Angelo?).

Marco Peresani (Ferrara), Riccardo Miolo & Giampaolo Dalmeri (Trento):

Skill among the climbers of the Alps: an assessment of micro-burin technology as a tool for reconstructing social behaviours.

Lithic technology in the specific case of microburin procedure, might become a valuable tool for bridging settlement dynamics and their social implications at the regional level in the study of the

Early Mesolithic in Eastern Italian Alps. Different types of data demonstrate seasonal occupations in the 1,900-2,400m fringe, aimed to accomplish various tasks tied with hunting and related processes/activities that induced human groups to camp at strategic places where lithic sets vary from rich and complex, to dearth and simple. In order to detail these sets and provide new data on settlement dynamics and the social components at highland and lowland sites, a broad re-examination of microburins has been carried out. Lateralization was the main feature taken into account in order to test hand preference, dexterity and techno-economical purposes of Sauveterrian hunters concerned with multi- and single occupations at sheltered locations.

Results show that lateralization is one of the most significant variables for differentiating the two categories of sites and the number of actors within them.

Marco Peresani (Ferrara) & Pietro Frizzo (Padua):

An haematite slab from Central Europe found at the Epigravettian site of Bus de La Lum (Venetian Pre-Alps).

Among the implements found during the 1998-2000 excavation at the open-air epigravettian site of Bus de La Lum (Younger Dryas, Cansiglio Plateau) two iron dye objects were found: the first is a large slab showing breakages and abrasions proving that it was deliberately used, the second is a small flake that refits to the slab in correspondence of one of the two shortest ridges used as hammer.

The minerographic study and the determination of light minerals carried out using polarizing microscope, SEM and electronic microsoundings on samples collected from the flake suggest an haematitic composition at the 85-90%. The haematite forms an almost compact felt made of tiny flat cristals with micro-implication of quartzitic gangue with iron chlorite and probable ankerite. Dispersed in the felt are several small and irregular voids and more rare discontinuous fissures arranged according to a light laminated pattern.

At the current state it may be supported that no among the iron deposits in the Italian alpine slope has similar mineralogical, structural and textural features. A certain comparison may be found with a particular facies (*brauneneisenerz* o *jaspilit*) in the iron Lahn-Dill type ore deposits cropping on large zones in Central Europe and specifically in Saxony, Thuringia, Sudetes Mountains and Moravia.

The hypothesis explaining very high-distance transport for this object is in accordance with the palaeogeographic and cultural scenario at the end of the Late-Glacial. Being the main eastern alpine passes accessible (Camporosso Pass) this discovery falls in the vast area covered by the late Epigravettian between the low Rhone Valley to the eastern European lowlands.

Daniel Richter (Leipzig):

A new Thermoluminescence technique for dating small heated flint artefacts.

Thermoluminescence (TL) dating of heated flint is frequently used to establish the age of Neanderthal sites and other Palaeolithic occupations. It is a dosimetric dating method, which employs the accumulation of radiation damage in crystal lattices. A piece of flint (as well as chert, hornstone, quartzite, etc.) can be dated by TL methods if it has been heated in a prehistoric fire to about 400°C. In principle, the method is applicable to almost one million years and has, in most cases, the advantage of an archaeological event to be dated directly. An overview of the techniques, parameters involved and a discussion can be found e.g. in Richter (in press).

Because of the irregular shape of most artefacts, it is difficult to establish the radiation dose contribution from alpha and beta emitters contained in the surrounding sediment. Therefore the outer two mm surface of each sample is removed in order to achieve a more precise result. Any parts which might have been affected by daylight during excavation are thus removed as well.

Given such a removal and the need for about one to two grams of extracted material for standard TL dating, the samples for dating have to be relatively large in the order of 10-15 g.

A new TL-technique has been developed (Richter & Krbetschek), which employs the orange-red TL emission and a single aliquot regeneration (SAR) protocol. In principle, an age estimation with only a few mg of material after surface removal is thus possible, which reduces the size of samples considerably. The only remaining restriction therefore is a minimum thickness of 5-6 mm and only a few grams of weight. Therefore many more Palaeolithic sites (e.g. Gesher Benot Ya'aqov, Israel) which contain only small pieces of burnt flint can now be dated.

Extensive methodological test were carried out, as well as comparisons of the technique with different 'traditional' TL-dating techniques (Richter & Krbetschek ; Richter & Temming). Heated flint samples from the Middle and Early Upper Palaeolithic sites of Bau de l'Aubiesier and Bérigoule in France, Jerf al'Ajla in Syria and the Geißenklösterle in Germany where used for comparisons. The precision of the new technique is comparable and results are in good agreement with age estimates obtained by standard TL dating. This new technique is a new tool which allows the age estimation for sites previously considered not to be datable.

References:

- Richter, D. Advantages and limitations of Thermoluminescence Dating of heated flint from Palaeolithic sites. (in press *Geoarchaeology*).
- Richter, D. & Krbetschek, M. (2006) A new Thermoluminescence dating technique for heated flint. *Archaeometry* 48, 695-705.
- Richter, D. & Temming, H. (2006) Testing heated flint palaeodose protocols using dose recovery procedures. *Radiation Measurements* 41, 819-825.

Arguitxu de la Riva-Caballero & Torstein Solhøy (both Bergen, N):

Archaeological excavation at Kvitevoll, Halsnøy Island, Western Norway, 2004. Results from the mite analysis.

This is a work done in collaboration with the archaeological survey carried out for the building of the road connection between Halsnøy Island and mainland in Kvinnherad community in Sunnhordaland County, western Norway. The scope of the work was to reconstruct the environment surrounding the human settlement and to identify the possible changes in the landscape due to human influence.

Oribatid mites were used as indicators of the environment at the archaeological excavation of Kvitevoll. Several series of samples were taken but only samples from a monolith yielded enough subfossil oribatid mites. This might easily explained by the fact that most of the samples analysed, besides those from the monolith, were rather mineral and it seems that they had oxic conditions. Thus, possible remains were already decomposed. Radiocarbon dates showed an age of 3905 ± 90 years BP at the top of the sequence and 7740 ± 155 years BP at the bottom of the sequence, which corresponds to the late Neolithic. The high number of oribatid mites recovered identified to the species level (93%) makes the reconstruction rather reliable.

The method used to analyse the samples for oribatid mites was similar to the method used to analyse samples for plant macrofossils described by Birks (2001). In our case, the sediments were not from a lake but from a drained mire. Identification of the different specimens was usually done following keys from Pérez-Íñigo (1993; 1997); Subías and Arillo (2001), Balogh and Mahunka (1983), Gylarov (1975) and personal experience. Nomenclature was according to Subías (2004). The sequence studied is divided in two periods, "moist woodland zone" and "wet woodland zone", following the change in the number of subfossil oribatid mites recovered. Woodland was clearly present during both periods; at the bottom of the sequence *Caleremaenus monilipes*, which according to Schatz (1989) is an oribatid associated to trees, and *Liebstadia humerata*, which lives under the bark of

trees and in the subalpine birch forest (T. Solhøy pers. com.), were already present. At the top of the first zone there were found remains of the oribatid mite species *Oribatula exilis* and *Phauloppia lucorum*, both associated to lichens, where they live and feed on (Knülle, 1957; Seyd and Seawards, 1984). Since most of the mites found with these two species indicate tree presence, as *Cultoribula juncta*, which is an indicator of old deciduous forest (T. Solhøy pers. com.), it is probable that *O. exilis* and *P. lucorum* lived in lichens on trees. Besides the oribatid species indicating wooded areas, there were also found fossil oribatid mites indicating moister and more open areas; *Moritzoppia neerlandica* and *Suctobelbella similis* are two examples. Knülle (1957) considered both species as inhabitants of moist and open areas, although never wet or soaked.

Along the second zone, "wet woodland zone", the number of oribatid remains indicative of more open and wetter areas increases. Remarkably is the increase of *M. neerlandica*, which indicates wet habitats. *Transoribates lagenula* is a species also preferring wet areas, but usually with tree presence (Popp, 1962; Weigmann & Miko, 2002). Although this species has been found before in Scandinavia (Lindberg *et al.*, 2004), this is the first record in Norway. During this second zone there is also a further increase of the subfossil oribatids indicative of trees/woodland. There were several species not found in the preceding zone, two of them were *Suctobelbella perforata* and *Dometorina plantivaga*. The former according to the findings of Knülle (1957), Cadwalladr (1969) and Hammer (1972) might be considered a species found mainly in moist forest litter. The latter species, *D. plantivaga*, is considered to be associated to lichens living on trees (Grandjean, 1950; Travé, 1963; Gjølstrup, 1978).

At the top of the sequence appears the species *Fuscozetes fuscipes*. This is considered a species with preference for wet surfaces of peat and acid swampy forest soils (Knülle, 1957). T. Solhøy (pers. com.) and Riva-Caballero (2003) consider this species as typical of wetland in western Norway. Besides *F. fuscipes* indicating a wetter habitat or water logged soil, at the top of the sequence there are several oribatid species indicating forest. *Furcoppia dentata*, *Liacarus acutidens*, *L. splendens* are three species associated with old deciduous forest (T. Solhøy pers. com.). *Odontoceobius elongatus* has been found in different occasions in the litter layer of forests within Scandinavia (Dalenius, 1950; Gjølstrup, 1978).

There is a large increase in oribatids associated to both trees/woodland and wet and open areas at the top of the sequence, which may be due to an increase in precipitation and, therefore, a lower rate of decomposition. Oribatid mites associated with trees and forest increased steadily during the whole period. However, oribatid mites associated with wet habitats also raised gradually during the whole period. It may be possible that mire was developing in the area. The most likely evolution of the landscape at Kvitevoll was from a more or less big forested area encircling patches of open areas towards less forested area with big open spaces of wet grassland, and tree groves remaining in the drier areas.

None of the oribatid subfossils found were indicative of any cultivation process. The existence of a mosaic of forested and open areas at Kvitevoll is constant during the whole sequence. It does not seem that the landscape changed substantially since the first human settled in the area.

References:

- Balogh, J. & Mahunka, S. (1983). Primitive oribatids of the Palaearctic region. In *The Soil Mites of the World* (ed J.B.S. Mahunka), Vol. 1, pp. 363. Elsevier, New York.
- Birks, H.H. (2001). Plant Macrofossils. In *Tracking Environmental Change Using Lake Sediments* (eds J. P. Smol, H.J. Birks & W. M. Last), Vol. Volume III: Terrestrial, Algal and Siliceous Indicators, pp. 50-74. Kluwer Academic Publishers.
- Cadwalladr, D.A. (1969) On the Soil Inhabiting Collembola (Insecta) and Oribatei (Acarina) of the Olderfjord Region of North Norway. *Astarte*, 2, 7-25.
- Dalenius, P. (1950) The oribatid fauna of South Sweden with remarks concerning its ecology and zoogeography. *Kungl. Fysiografiska Sällskapets i Lund Förhandlingar*, 20, 43-48.
- Gilyarov, M.S. (1975) A Key to the Soil-Inhabiting Mites. Sarcopiformes, Nauka, Moscow, USSR.

- Gjelstrup, P. (1978) Oversigt over Danmarks pansermider (Acarina, Oribatei). Ent. Meddr., 46, 109-121.
- Grandjean, F. (1950) Sur Deux Espèces du Genre Dometorina N. G. et les Mœurs de D. Plantivaga (Berl.) (Acariens, Oribates). Bulletin de la Société Zoologique de France, 75, 224-242.
- Hammer, M. (1972) Microhabitats of oribatid mites on a Danish woodland floor. Pedobiologia, 12, 412-423.
- Knülle, W. (1957) The distribution of Acari: Oribatei in the soil. Zeitschrift für Morphologie und Ökologie der Tiere, 46, 397-432.
- Lindberg, N., Persson, T., & Ahlström, K. (2004) Sexton nya oribatidarter (Acari: Oribatida) för Sverige. Entomologisk Tidskrift, 125, 133-142.
- Pérez-Íñigo, C. (1993) ACARI, Oribatei, Poronota. In Fauna Ibérica (ed M.A.e. *al*), Vol. 3, pp. 320. Museo Nacional de Ciencias Naturales CSIC, Madrid.
- Pérez-Íñigo, C. (1997). Acari, Oribatei, Gymnionota I. In Fauna Ibérica (ed M.A. Ramos), Vol. 9, pp. 374. Museo Nacional de Ciencias Naturales. CSIC, Madrid.
- Popp, E. (1962) Semiaquatile Lebensräume (Bülten) in Hoch- und Niedermooren (Semi-aquatic biotopes (hummocks) in raised bogs and fens. II. The mite fauna). Int. Revue ges. Hydrobiol., 47, 533-579.
- Riva-Caballero, A.d.l. (2003) Oribatid mite communities in bogs along an altitudinal gradient and palaeoecological reconstruction using fossil oribatid mites in western Norway. Unpublished Master thesis (Cand-scient), University of Bergen, Bergen.
- Seyd, E.L. & Seawards, M.R.D. (1984) The association of oribatid mites with lichens. Zoological Journal of the Linnean Society, 369-420.
- Schatz, H. (1989) Oribatida (Acari) aus dem Kalser Dorfertal (Osttirol, Hohe Tauern, Österreich) (Oribatid Mites (Acari: Oribatida) from the Kalser Dorfertal Valley (Central Alps, Eastern Tyrol, Austria)). Ber. nat.- med. Verein Innsbruck, 76, 107-125.
- Subías, L.S. (2004) Listado sistemático, sinonímico y biogeográfico de los ácaros oribátidos (Acariformes, Oribatida) del mundo (1758 - 2002). Graellsia, 3-305.
- Subías, L.S. & Arillo, A. (2001). ACARI, Oribatei, Gymnionota II. In Fauna Ibérica (ed M.A.e. *al*), Vol. 15, pp. 289. Museo Nacional de Ciencias Naturales CSIC, Madrid.
- Travé, J. (1963) Écologie et biologie des Oribates (Acariens) saxicoles et arboricoles Hermann, Paris.
- Weigmann, G. & Miko, L. (2002) Redescription of *Oribates lagenula* Berlese, 1904, the type of *Lagenobates* n. gen. (Acarina Oribatida). Redia, 85, 29-35.

Thomas Weber (Magdeburg):

The Lower/ Middle Palaeolithic Transition – is there a Lower/ Middle Palaeolithic Transition?

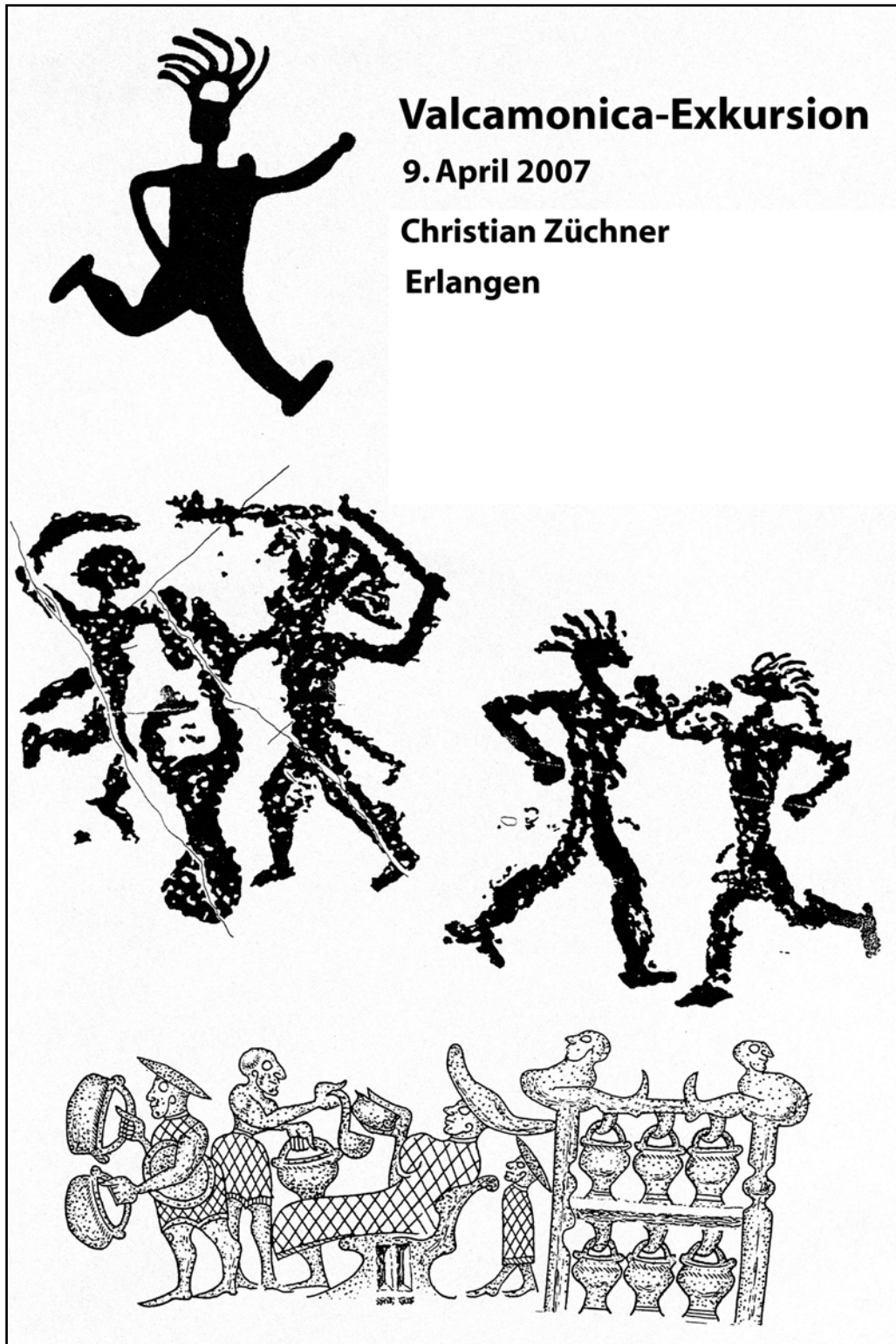
In a new number of Current Anthropology the American colleague Gilliane Monnier discusses the problem of the Lower / Middle Palaeolithic transition. Studying typological data of geologically synchronized West European artefact inventories she questioned this periodization on the basis of „index fossils“ as a large zone of overlap is known since the nineteenth century. Temporal trends agreeing with a Lower / Middle Palaeolithic periodization are insignificant compared „with chronological variations in each of this tool types“. Therefore it would be necessary to discuss the periodization „on the basis of a comprehension examination on multiple lines of evidence“.

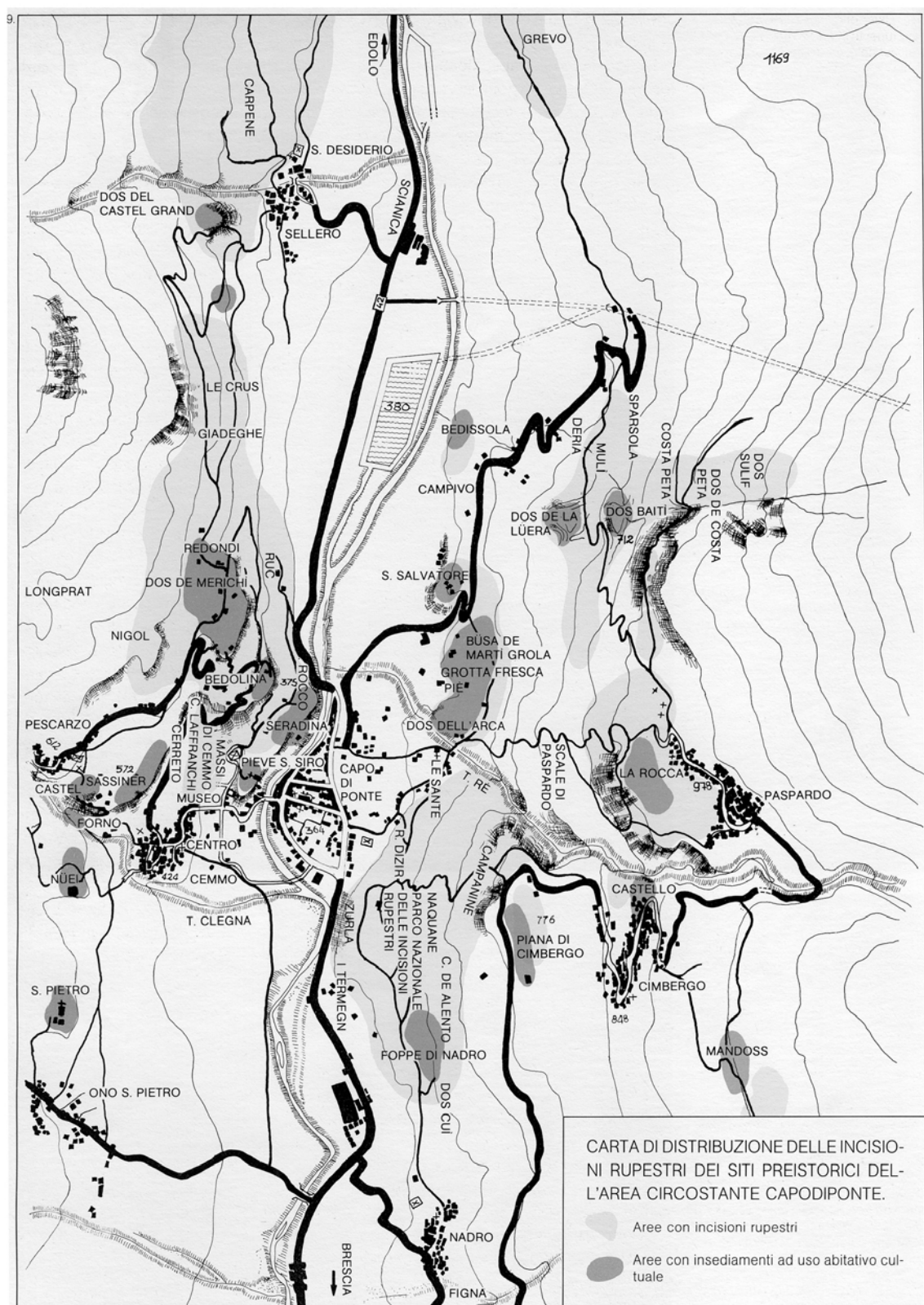
The stone artefact *technology* can be seen as one of these multiple lines. As even the making of blanks works more independently from the economic requirements of the special site than tool typology we can compare the inventories from the viewpoint of a technological „mode“. Especially the characteristic features of flake production allow the possibility of a senseful comparison between different artefact inventories made of different - „macro-“ and „microlithic“, from cryptoc-

ristalline to coarse-grained – raw materials in different periods and different regions. The Central, East and West European artefact assemblages enable interesting inferences for the „Lower / Middle Palaeolithic periodization“.

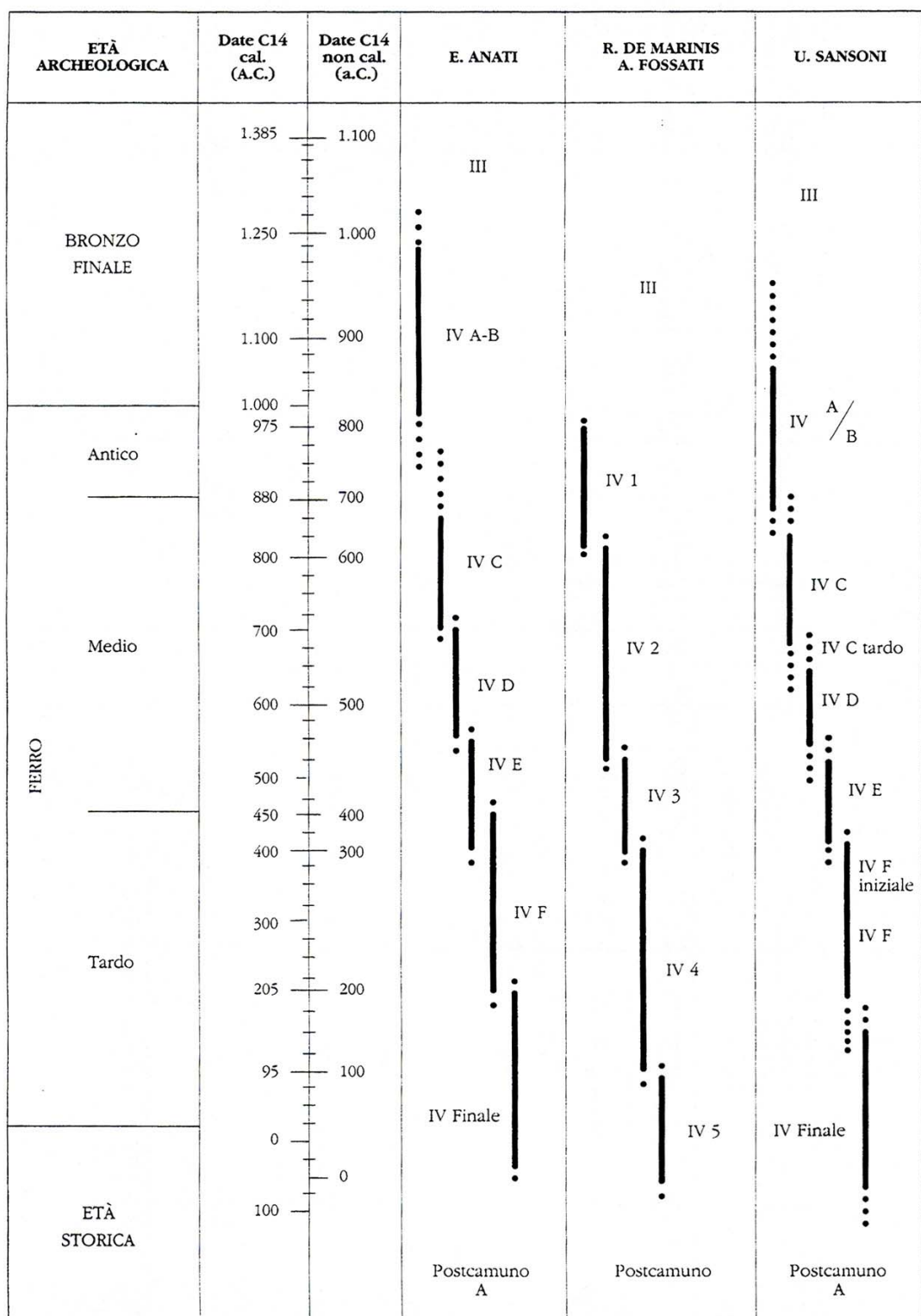
Exkursionsbeiträge (*Excursion's Guide*)

Montag, 09.04.07 – Monday, April 9th





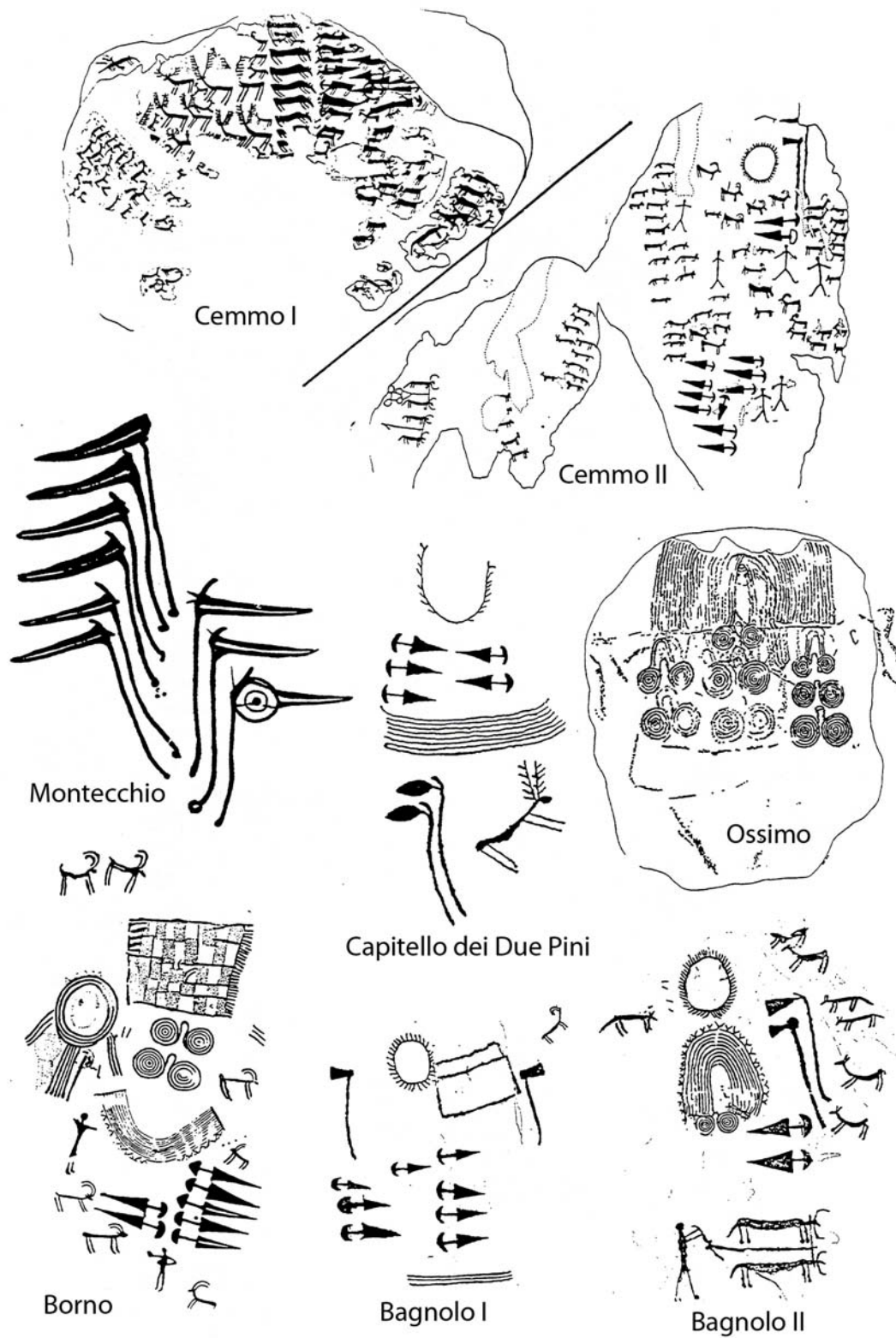
(c) A. Priuli, Incisioni rupestri della Val Camonica 1985, S. 46.



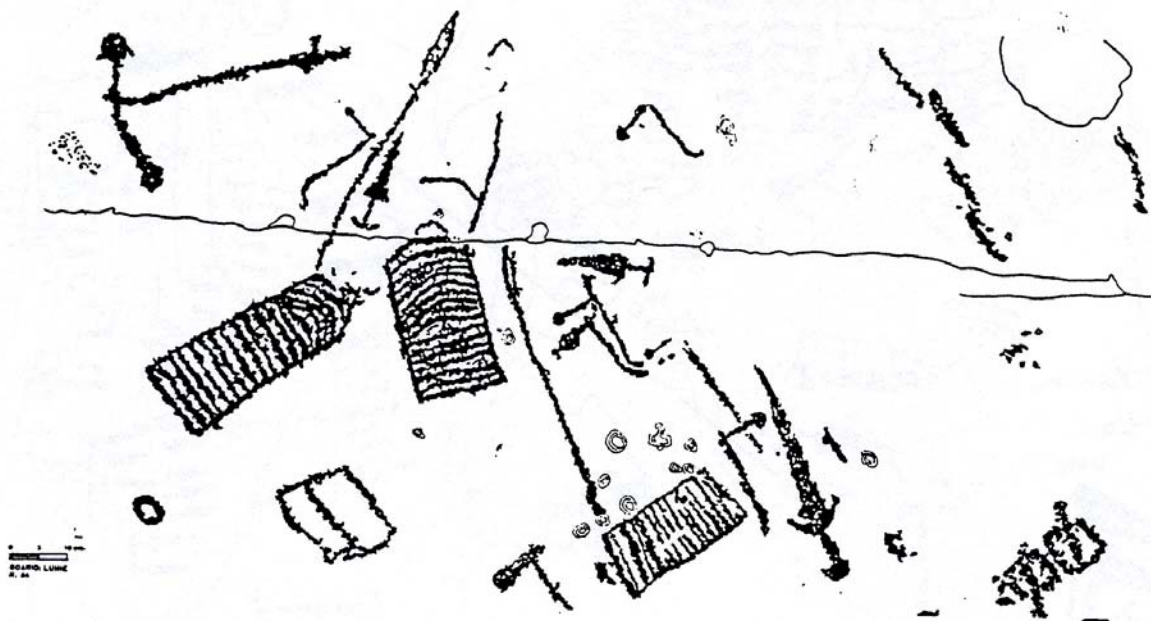
La datazione calibrata è elaborata su dati di C. Renfrew e R.M. Clark, 1974 e R.M. Clark, 1975.

Valcamonica: Vergleichende Chronologie der bronze- und eisenzeitlichen Felsbilder.

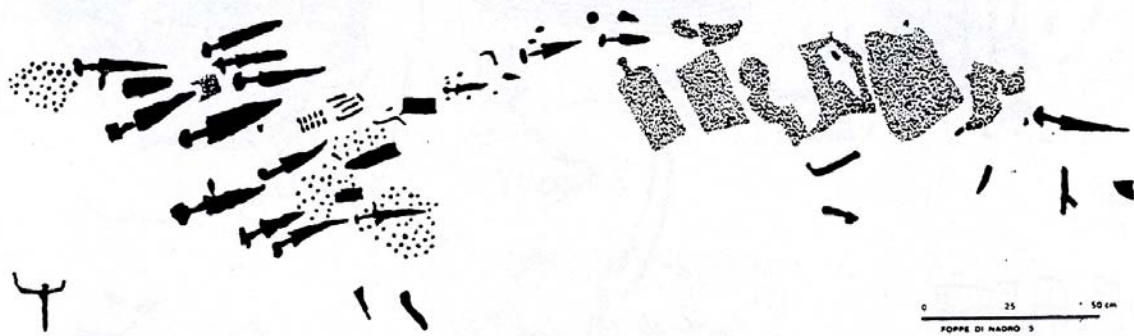
Sanconi U. & Gavaldo S. 1995: L'arte rupestre del Pià d'Ort. La vicenda di un santuario preistorico alpino. Archivi 10. Capo di Ponte.



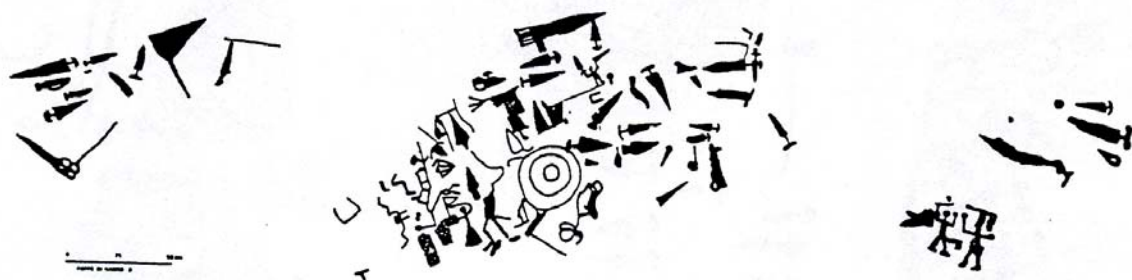
Valcamonica: Stelen und stelenartige Felsbilder der Kupferzeit (3. Jahrtausend)



Luine, Fels 35 (Boario Terme)



_ Foppe di Nadro, Fels 3 und 5



Valcamonica: Waffendarstellungen der Bronzezeit

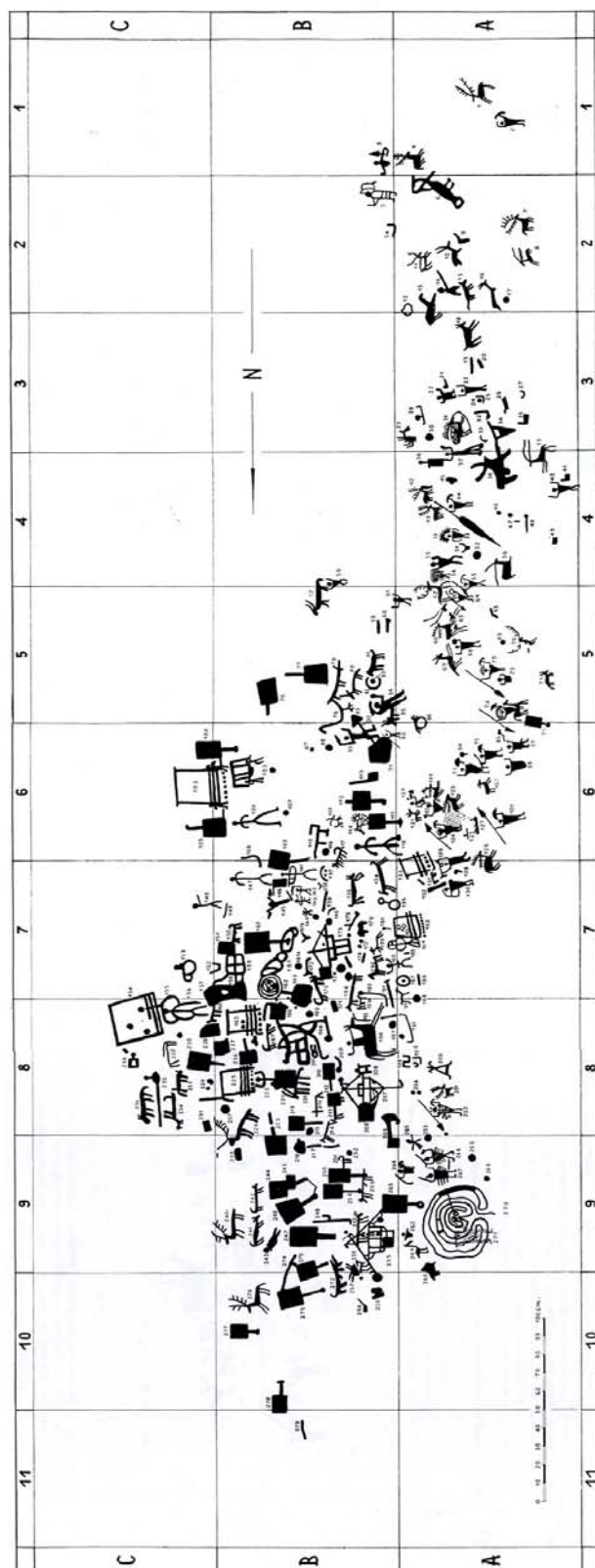
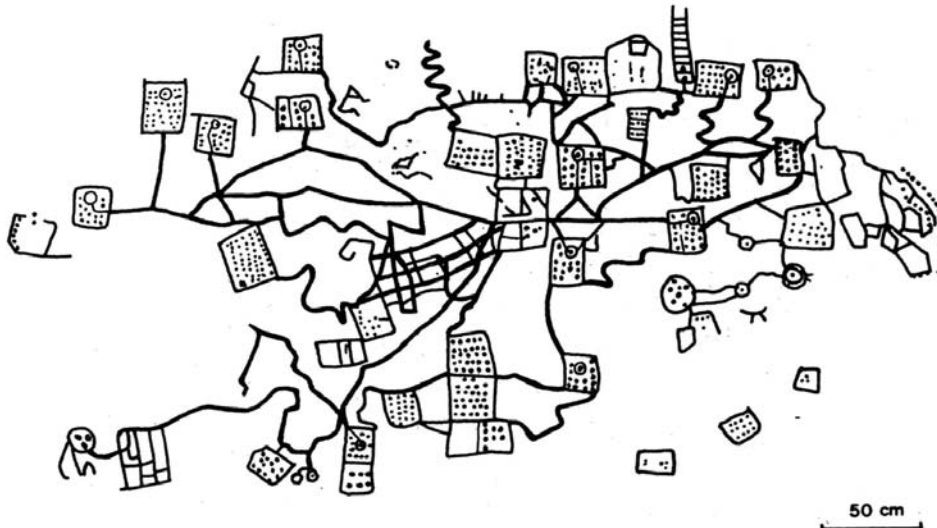


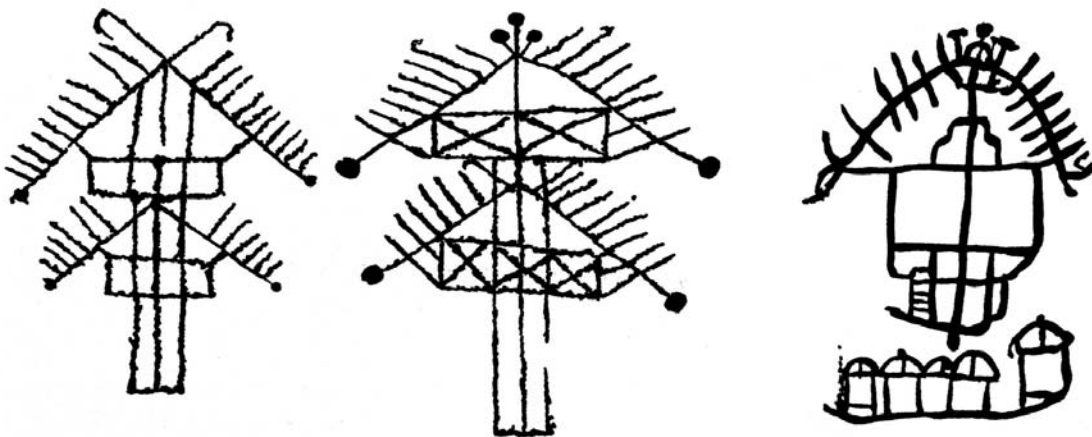
Fig. 5. — Detail des gravures de la zone L.

Archéologie de l'É. P. H. — Mémoire 31 (p. 155).

Großer Fels von Naquane. (C): E. Anati, La Grande Roche de Naquane. Paris 1960.



Die Karte von Bedolina. Pläne von Gehöften und Dörfern sind ein wichtiges Thema in der Kupfer- und Eisenzeit



Hausdarstellungen der Eisenzeit. Häuser oder Speicherbauten auf hohem Unterbau gehören zu den wichtigsten Themen der eisenzeitlichen Felsbilder bei Capo di Ponte (Brescia)

Die aurignacienzeitlichen Malereien aus der Grotta di Fumane

Alberto Broglio*, Gianna Giachi**, Fabio Gurioli* und Pasquino Pallecchi**

Einleitung

Die in den Monte Lessini (Voralpen Venetiens) gelegene Grotta di Fumane beherbergt eine würmzeitliche Schichtenfolge von 10 Metern Mächtigkeit mit mehreren Niveaus menschlicher Besiedlung aus dem Moustérien, dem Aurignacien und dem Gravettien. In den Aurignacienschichten, die zwischen $36.800 \pm 1200/-1400$ und 30.320 ± 320 BP datieren, haben die Grabungen mehrere Behausungsstrukturen, Stein- und Knochengeräte, Schmuckstücke und auch verzierte Objekte hervorgebracht, genauer gesagt kleine Stücke gelben und roten Ockers sowie Kalksteinfragmente, die mit rotem Ocker verziert sind. Die Untersuchung dieser Fragmente hat bestätigt, dass die Menschen des Aurignacien Wand und Decke der Höhle mit roten Darstellungen ausgeschmückt haben. Die durch Frostbruch hervorgerufene Beschädigung der Felsoberflächen hat dazu geführt, dass sich Fragmente von der Wand gelöst haben und in die Begehungshorizonte gefallen sind. In einem zweiten Schritt wurden diese Fragmente dann in die Sedimente eingebettet und ganz oder zum Teil mit Kalkkonkretionen umhüllt. Einige Fragmente zeigen gut definierte bemalte Bereiche, die aber durch Brüche unterbrochen werden, die durch das Abplatzen hervorgerufen wurden. Diese bemalten Zonen sind somit unlesbar. Dagegen zeigen zwei Fragmente erkennbare Darstellungen, auch wenn sie unvollständig sind: Ein Tier mit vier Beinen und eine anthropomorphe Figur (Broglio u. Gurioli 2004).

Die Umgebung, der Fundplatz und die Begehungen im Aurignacien

Der Südhang der westlichen Monte Lessini (Voralpen Venetiens) erstreckt sich in Fächerform. Von seinen höchsten Gipfeln (1500 – 1800 m NN) geht der Hang kontinuierlich über etwas mehr als 20 km Länge in die venetische Poebene über. In einer Höhe von ca. 1200 bis 600 m NN formt dieser Hang ein Hochplateau, das von tief eingeschnittenen Tälern durchschnitten wird. Dazwischen sind Bergrücken ausgebildet, die das Plateau mit dem tiefer gelegenen Mittelgebirge verbinden. Während des Würm - Interpleniglazials (d.h. der Periode zwischen ca. 40.000 und 30.000 BP) bot der Westteil der Monte Lessini den paläolithischen Jägern ein breites Spektrum an Ressourcen, die im Rahmen eines Tages erreichbar waren. Die Jagd fauna setzte sich aus Vertretern der Alpenwiesen und der felsigen Umwelt des Hochplateaus zusammen; ferner durch Vertreter des Waldes in den sich weiter unten anschließenden Wäldern sowie durch Enten im feuchten Umfeld der Hochebene. Zahlreiche Aufschlüsse tertiärer Gesteine und Flussterrassen erlaubten eine bequeme Versorgung mit lithischen Rohmaterialien. Diese setzten sich aus Knollen und Blöcken von Silices aus unterschiedlichen geologischen Formationen zusammen. Diese verschiedenen Silex-Rohmaterialien sind durch ihre Textur und Farbe, ihre Form, ihre Größe und ihre Unversehrtheit voneinander unterscheidbar. Sie bieten eine breite Auswahl von Materialien, die von ihrer Größe und Form her ideale Voraussetzungen zur Herstellung von Grundformen liefern, die in Geräte und Waffen umgestaltet werden. Und schließlich erlaubte es die Präsenz mehrerer Felsüberhänge und Höhlen, feste oder auch nur kurzzeitige Lagerplätze einzurichten. In diesem Gebiet liegt die Grotta di Fumane in 350 m über dem Meeresspiegel.

Im Jahre 1988 begonnene und bis heute andauernde systematische Ausgrabungen haben es erlaubt, die gesamte stratigraphische Sequenz von ca. 10 m Mächtigkeit aufzudecken, die sich im Verlaufe der Würmeiszeit gebildet hat. Die Sedimente gliedern sich in vier große lithostratigraphische Einheiten. Die beiden oberen Einheiten (A und D) setzen sich aus Sequenzen des Moustérien (A 13 – A 4), des Aurignacien (A 3 – A 1, D 6 – D 3) und des Gravettien (D 1d) zusammen. Das

abrupte Erscheinen des Aurignacien, das einen deutlichen Bruch mit den tieferen Fundschichten markiert, entspricht dem Ende einer klimatisch relativ gemäßigten Phase. Mehrere radiometrische Datierungen geben für die letzten Begehungen des Moustérien ein Alter zwischen 42.000 und 35.000 Jahren und für die aurignacienzeitlichen Begehungen zwischen 36.000/ 34.000 und 30.000 Jahren an. Aus archäologischer Sicht unterscheiden sich die beiden Sequenzen durch ihre Behauungsstrukturen, die Jagdstrategien und die Industrien. Die Herstellung von Artefakten aus organischen tierischen Rohmaterialien, Schmuckstücke und künstlerische Aktivitäten finden sich ausschließlich im Rahmen der Sequenz des Aurignacien. Die archäologischen Hinterlassenschaften legen nahe, dass die Grotta di Fumane für die aurignacienzeitlichen Jäger der Monte Lessini ein zentrales Basislager darstellte. Der Wohnbereich wird durch gut definierte Feuerstellen, durch Pfostenlöcher, durch Abfallzonen und durch Ockerkonzentrationen im Sediment dargestellt, die sich zwischen dem Höhlenraum und dem Vorplatzbereich erstreckten (**Abb. 1**) (Broglio et al. 2003).

Die archäozoologische Untersuchung hat gezeigt, dass die Höhle vornehmlich vom Ende des Frühjahrs bis zum Ende des Herbstes begangen wurde, aber nur gelegentlich während des Winters und zu Beginn des Frühjahrs. Was die Jagdbeute anbetrifft, überwiegen die Vertreter der Alpenwiesen und des felsigen Umfeldes gegenüber den an den Wald gebundenen Arten. Eine selektive Jagd auf ein bestimmtes Jagdtier scheint nicht stattgefunden zu haben. Auch die Bestimmung des Sterbealters der Jagdfauna zeigt keine bestimmte Auswahl. Die aurignacienzeitlichen Jäger aus Fumane jagten vornehmlich die Arten der Alpenwiesen und insgesamt des offenen Milieus, wie z.B. unter den Säugetieren Steinbock, Gemse, Murmeltier, Alpenhase und Wisent sowie



unter den Vögeln Dohle und Krähe. Im Wald waren es Hirsch, Riesenhirsch, Reh, Bergfasan und Drossel, die bevorzugt gejagt wurden. Was die Vögel anbetrifft, so wurden einige Arten eher im feuchten Milieu am Fuße der Hügel gejagt, wie etwa die Ente. Im Faunenspektrum des Aurignacien finden sich auch Karnivoren (Fuchs, Wolf, Braunbär, Hyäne, Lux, Leopard und Löwe), die sehr viel häufiger als im unterlagernden Moustérien vorkommen, sowie Marderarten (Wiesel, Iltis, Hermelin, Vielfraß und Marder). Der höhere Anteil der Karnivoren kann zumindest zum Teil durch die Nutzung der Felle durch den modernen Menschen erklärt werden.

Die genutzten Gesteinsrohmaterialien stammen hauptsächlich aus den Monte Lessini selbst (Broglio et al. im Druck). Nur eine kleine Artefaktmenge ist aus Radiolarit gearbeitet, der aus einer anderen Region stammt, aber am Ort verarbeitet wurde. Der Silex wurde in Form kleiner Blöcke abgebaut, der vor allem aus primären Vorkommen bzw. aus solchen in Hangposition stammt, während dessen auf solche in Flussterrassen seltener zurückgegriffen wurde. Es scheint eine besondere Auswahl des Rohmaterials vorzuliegen. Die ausgewählten Materialien verfügen über eine sehr feine Textur und hervorragende Schlageigenschaften (Grauer und braun-gelblicher Silex aus der mesozoischen Biancone-Formation, grau-grünlicher und gelber Silex aus der eoänen Formation der Scaglia Variegata, rötlicher Silex aus der Scaglia Rossa und oolithischer Silex aus eoänen Kalkareniten). Die Gesteinsrohmaterialien wurden fast vollständig in ihrer Rohform in die Höhle eingebracht, um dort dann nach den unterschiedlichen *chaînes opératoires* verarbeitet zu werden. Der erste Arbeitsschritt bestand in der Zurichtung großer Kerne, von denen im Rahmen ein und desselben Verarbeitungszyklus zunächst Klingen und später, nach fortgeschrittener Volumenverkleinerung, auch Lamellen abgebaut wurden. Die zweite Art der Grundformerzeugung spielte sich an gekielten

Kernen zur ausschließlichen Gewinnung von Lamellen ab. Die Klingen wurden zu Kratzern, Stacheln und retuschierten Klingen modifiziert. Die Lamellen wurden zu kleinen Spitzen und zu Lamellen mit marginaler Retusche umgeformt. Sie waren geschäftet für Kompositgeräte aus Holz vorgesehen, sei es als Wurfaffen, Messer oder für andere Geräte.

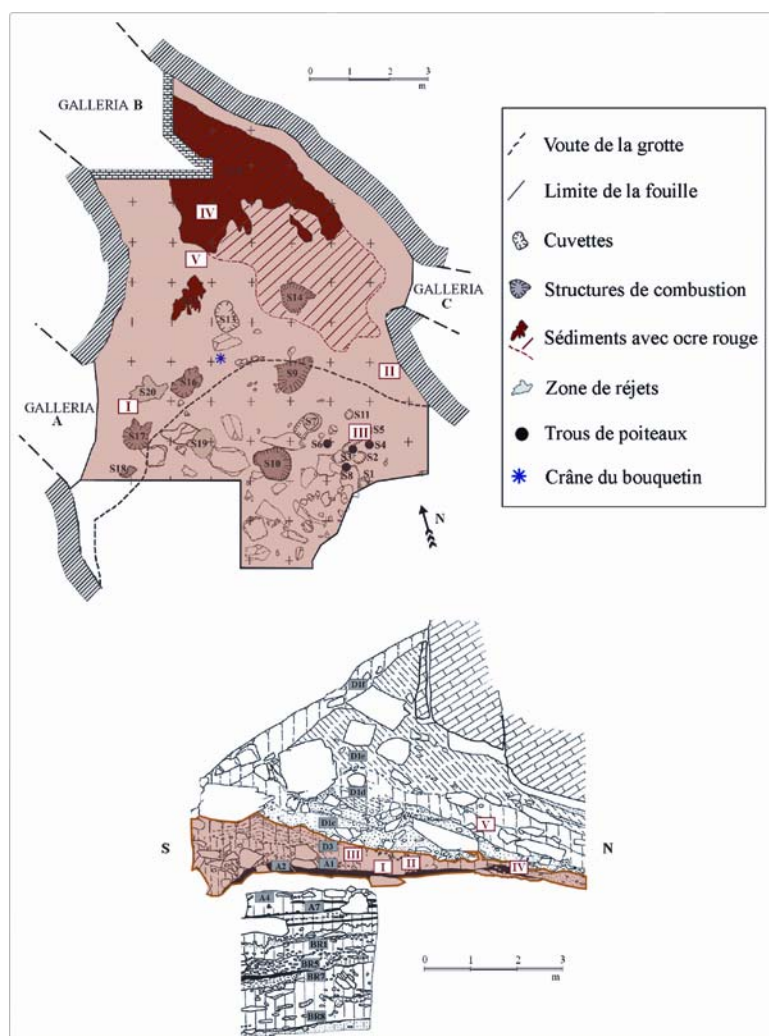
Rengeweihe und Knochen wurden vor allem zur Herstellung von Geschosspitzen (mit gespaltenen Basis) herangezogen, ferner für Ahlen, Spateln und Pfrieme. Die aurignacienzeitlichen Ablagerungen haben zudem eine respektable Menge an Schmuckstücken erbracht: Vier Hirschschneidezähne mit einer Einschnürung an der Wurzel sowie insgesamt 723, zu insgesamt 58 Taxa zählende marine Schmuckschneckenhäuser wurden an der damaligen Mittelmeerküste aufgesammelt und in die Höhle eingetragen. Es scheint eine Auswahl auf besonders kleine Exemplare mit einer auffälligen Ornamentierung stattgefunden zu haben. Von den Schmuckschnecken weist ungefähr die Hälfte mindestens eine Durchlochung auf, die entweder von marinen Raubtieren oder vom Menschen stammen. Neben diesen Schmuckstücken wurde ebenfalls die Rippe eines kleinen Pflanzenfressers gefunden, die mit zwei quer verlaufenden fein eingeschnittenen Linienreihen versehen wurde (Broglia u. Dalmeri (Hrsg.) 2005).

Die Verteilung der häufigsten Fundkategorien (Lamellenkerne, Kratzer, Spitzen an Lamellen, Lamellen mit marginalen Retuschen, Meeresschnecken) hat im Verhältnis zur Höhlentopographie und zu den evidenten Behausungsstrukturen mehrere latente Strukturen ergeben, die es gestatten, Hypothesen zur räumlichen Organisation dieses aurignacienzeitlichen Lagerplatzes aufzustellen.

Die Ausschmückung der Höhle

Im Zuge der Ausgrabung der aurignacienzeitlichen Fundschichten konnten mehrere Funde und Befunde beobachtet werden, die im Zusammenhang mit der Verwendung von Ocker stehen: Zwei weitläufige Sedimentflecken, die durch Ocker rot gefärbt sind, mehrere kleine Blöcke roten und gelben Ockers und mehrere durch Frosteinwirkung entstandene Steinfragmente, die mehr oder weniger rot gefärbt waren (Abb. 2) (Broglia, De Stefani et al. 2006). Nach den ersten Ergebnissen der chemischen und mineralogischen Untersuchungen zeichnet sich eine Ockergruppe durch eine Zusammensetzung auf Basis von Eisenoxiden und Tonmineralien, letztere reich an Aluminium aus. Dieses Material mit hohen Haftqualitäten konnte zum Malen bereits durch simples Auflösen in Wasser verwendet werden.

In den aurignacienzeitlichen



Schichteinheiten A 2, D 5 und D 3 wurden einige mit rotem Ocker bemalte Felsfragmente gefunden. Ein bemaltes Fragment stammt auch aus der darüber liegenden gravettienzeitlichen Einheit D 1d. Es handelt sich um von der Höhlendecke oder den -wänden abgeplatzte Fragmente, so wie es die gesteinskundlichen Untersuchungen zu belegen scheinen. Die morphologische Untersuchung der Oberflächen zeigt, dass die Farbe auf erodierte und teils mit Kalkkonkretionen überzogene Flächen aufgetragen wurde, die über einen längeren Zeitraum hinweg dem Tageslicht ausgesetzt gewesen sein müssen. Die anderen Oberflächen der Fragmente machen einen eher frischen und durch Beschädigung entstandenen Eindruck mit frischen Kanten. Als sie dann in der Folge in Sedimente eingelagert wurden, wurden einige Fragmente partiell mit feinen Kalzitkonkretionen umhüllt. Bis zu ihrer Reinigung und dem Abnehmen dieser Konkretionen ließen einige größere Fragmente bereits mehr oder weniger große gemalte Linien errahnen. Diese Linien stellen Bilder mit gut definierten Konturen dar. Jedoch erweisen sich diese Bilder als unvollständig, weil sich die Bemalung jenseits von Bruchflächen fortzusetzen scheint.

Das erste Fragment wurde an der Basis der Einheit D 3 gefunden, im Kontakt mit der Schichteinheit A 2, genau unterhalb des Eingangsportals der Höhle.



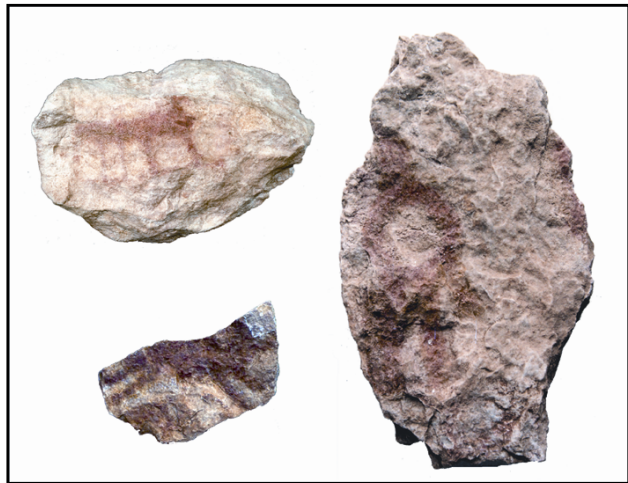
Dieser Stein (**Abb. 3**) ist 30 cm lang und zeigt eine gewölbte mit rotem Ocker bemalte Vorderseite. Die Malerei stellt das Profil eines Tieres mit vier Beinen dar, ohne Schwanz, mit einem schlanken Körper, einem langen Hals und einem relativ kleinen, aber auch unvollständigen Kopf. Man kann deutlich zwei Vorder- und ein Hinterbein unterscheiden. Das Abplatzen eines Abschlags scheint die Zone reduziert zu haben, in der sich das vierte Bein befunden haben dürfte.

Das zweite bemalte Fragment stammt aus der Schichteinheit D 5. Diese Schicht setzt sich aus Frostschutt zusammen, der sich im Eingangsbereich der Höhle nahe der linken Wand gebildet hat. Dieses Fragment (**Abb. 4**) zeigt nach Entfernen des Kalzites, der die komplette Vorderseite bedeckt hatte, die Silhouette einer von vorn dargestellten anthropomorphen Figur. Die Achse des Körpers ist entlang eines natürlichen Kammes gemalt. Die Figur ist 18 cm hoch und zeigt auf dem Kopf zwei Hörner (oder eine Maske?). Unterhalb des Halses sind die Arme nach Außen gehalten und die rechte Hand hält einen nach unten hängenden Gegenstand (ein rituelles Objekt?). Auf Höhe des Bauchnabels beobachtet man seitlich zwei kleine nicht symmetrische Vorsprünge. Im unteren Teil verbreitert sich der Körper im Zusammenhang mit dem Bauch, an dem die gebogenen Beine ansetzen.



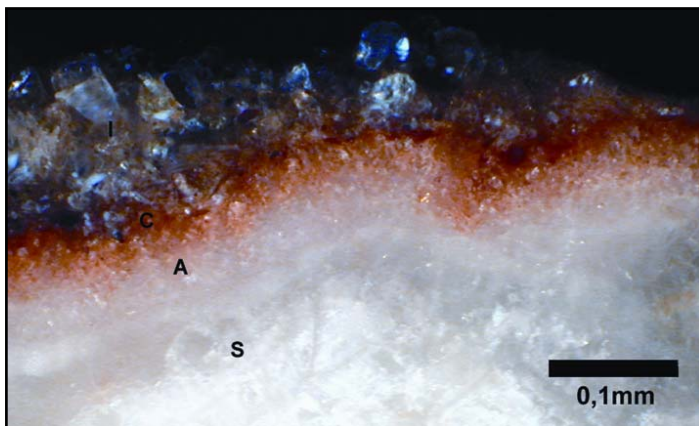
Die Malerei ist unvollständig: Das Bild ist entlang der rechten Seite des Körpers gebrochen.

Vier weitere bemalte Fragmente zeigen Figuren oder Teile von Figuren, die schwer zu interpretieren sind (**Abb. 5**). Das Alter von 35.000/ 34.000 bis 32.000 Jahren B.P., das sich aus den radiometrischen Datierungen und der aurignacienzeitlichen Begehung der Höhle ergibt, liefert auch eine Angabe zum Alter der Felsfragmente, die auf die Begehungshorizonte gefallen sind. Es scheint nicht möglich zu sein, dass die Malereien älter sind, da nichts Vergleichbares in den unterliegenden Fundschichten gefunden wurde, trotz der Präsenz einer enormen Akkumulation von Frostschuttfragmenten.



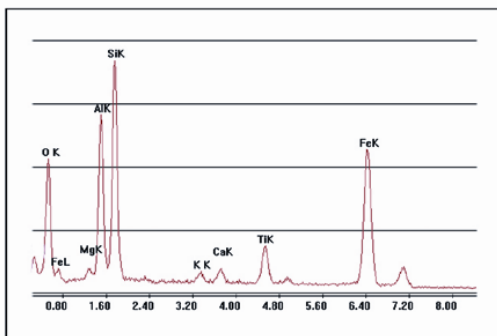
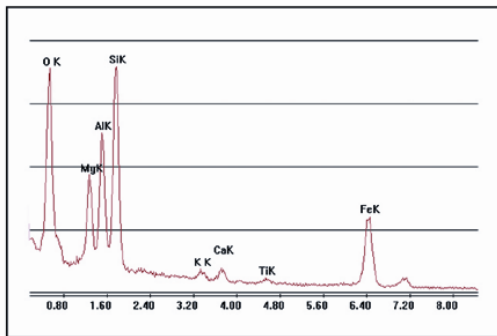
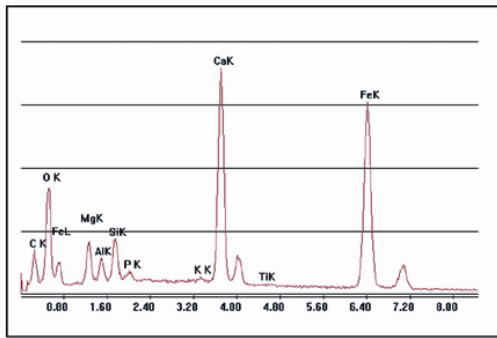
Die Malereien

Im Ziel, den Maluntergrund sowie die zur Herstellung der Farben genutzten Materialien zu charakterisieren, haben wir von fünf bemalten Fragmenten Proben entnommen. Die Proben wurden mithilfe der Techniken der optischen Mikroskopie, mittels Elektronenmikroskopie, mit EDX-Mikroanalysen (Energiedispersive Röntgenanalytik), Röntgendiffraktometrie und Gaschromatographie mittels Massenspektrometer analysiert.



An allen Proben konnte das Substrat erkannt werden, das aus karbonatischem Gestein besteht (Kalzitisch für das Fragment IV und dolomitisch für die anderen Fragmente) und das oberflächlich von einer weißen Verwitterungsschicht mit niedriger Kohäsion aus mikrokristallinem Kalzit ergriffen ist (**Abb. 6**). Diese 0,05 bis 0,3 mm dicke Verwitterungsschicht ist stets unter der Farbe vorhanden.

Die elementarchemische Analyse der roten Farbe erbrachte als Ergebnis charakteristische Elemente eines roten Ockers, den man mit Residualsedimenten des Karstmilieus in Verbindung bringen kann (Fe, Si, Mg, K, Ca und Ti), die in den Monte Lessini bekannt sind (**Abb. 7**). Diese Sedimente wurden durch Eisenoxide und von Silikaten gebildet, die über einen hohen Aluminiumgehalt verfügen. Die Farbprobe des Fragmentes III war anders. Zum einen bildet die Farbe eine zusammenhängende Schicht auf dem Untergrund des Substrates (bei den anderen Fragmenten findet sich die Farbe nur in winzigen Höhlungen der Oberfläche). Und zum anderen wird die chemische Zusammensetzung ausschließlich von Eisen (Fe) bestimmt: Die rote Farbe resultiert aus Eisenoxid, wahrscheinlich Hämatit (Fe_2O_3).



Im Verbund der Aurignacien-Schichten aus Fumane wurde auch eine Knolle aus mikrokristallinem Hämatit gefunden. Sie verfügt über ein massives, kompaktes Inneres von grau-metallischer Färbung. Knollen derselben Komposition finden sich auch im geologischen Probenmaterial von Ocker, das aus den Monte Lessini bekannt ist. Die aurignacienzeitlichen Jäger konnten damit roten Ocker und Hämatit aus der Region ausbeuten.

Im Aurignacien von Fumane wurden noch weitere kleine Ockerblöcke unterschiedlicher Zusammensetzung gefunden. Es gibt Ockerstücke mit derselben Komposition wie der Ocker, der zum Bemalen des Felsens verwendet wurde, aber es gibt auch Ocker, der sich durch zahlreiche körnige Quarzeinschlüsse auszeichnet, den man so in den Vorkommen der Region nicht kennt, der aber typisch für die Ockersande der Provence ist. Schließlich hat die Recherche nach organischen Komponenten, die als hypothetisches Bindemittel der Farbe gelten, in den gefärbten Bereichen einen sehr niedrigen Satz von Substanzen erkannt, die sich von Lipiden und Proteinen ableiten. Dieser Anteil ist aber identisch mit demjenigen, der auch in den nicht bemalten Bereichen der Felsfragmente erkannt wurde. Wir möchten zwei Hypothesen formulieren: Die Bemalung wurde mit in Wasser aufgelösten Pigmenten ausgeführt. Man hat sich dabei die charakteristischen Haftqualitäten des tonigen Bestandteils zu Nutze gemacht, kam also ohne organisches Bindemittel aus. Oder man verwendete ein Bindemittel, das im Laufe der Zeit so zersetzt wurde, bis es nicht mehr nachweisbar war. Als weitere Hypothese kann man nicht ausschließen,

dass die ermittelten Amino- und Fettsäuren vom Fixiermittel stammen, das auf sämtlichen Oberflächen der bemalten Fragmente aufgetragen wurde oder aber, dass sie von sonstigen menschlichen Aktivitäten oder schließlich von Mikroorganismen stammen, die auf dem Gestein präsent sind.

Schlussbetrachtungen

Unserer Auffassung nach können wir trotz der nur bescheidenen Menge an bekannten Beispielen konstatieren, dass das Oeuvre der figurativen Kunst des Aurignacien über eine bemerkenswerte Variabilität verfügt. Die Skulpturen der Schwäbischen Alb, die Figur aus Stratzing, die Einritzungen in den Felsüberhängen der Dordogne, die Malereien aus dem Eingangsbereich der Grotta di Fumane und die aus der Grotte Chauvet weisen auf gleich viele Zentren hin, die sich in weit entfernten Regionen und umgeben von sehr unterschiedlichen Umweltverhältnissen befinden. Die Alterseinstufungen dieser Darstellungen verteilen sich in einem Intervall von mehreren Tausenden von Jahren. Jedes einzelne dieser Werke offenbart eine ureigene expressive Ausdrucksweise. Diese Aussage steht nicht im Gegensatz zu der Zuweisung all dieser Fundstellen in das Aurignacien, das als eine große, durch eine gemeinsame technologische Basis charakterisierte taxonomische Einheit wahrgenommen wird: Anwendung von Verarbeitungsketten, die auf die Herstellung von Klingen und Lamellen und auf die Produktion aus Lamellen gearbeiteter Projektilspitzen ausgerichtet sind, sowie

Herstellung von Spitzen aus harten tierischen Rohmaterialien. An diese gemeinsamen technischen Traditionen knüpfen sich Menschengruppen, die an unterschiedliche Umweltbedingungen angepasst sind und die im Verlauf von einigen Tausenden von Jahren neue Lebensweisen, Wirtschaftssysteme und sehr wahrscheinlich auch soziale Organisationen und unterschiedliche Kulturen entwickeln.

Bezogen auf die bildlichen Darstellungen kann der Gegensatz zwischen den eher „primitiv“ wirkenden Bildern aus Fumane und der expressiven Reife des Oeuvres aus der Grotte Chauvet eine Erklärung entweder in einer Diachronie, in einer kulturellen Differenzierung oder aber auch in einer funktionalen Auffächerung finden. Die Grotte Chauvet wurde als Ort der Initiation und des Kultes genutzt, wo wahrscheinlich wiederholt mehrere Gruppen aurignacienzeitlicher Jäger zusammentrafen, die sich derselben Tradition verbunden fühlten. Ihre Werke erforderten eine gewisse Organisation von Mensch und auch von Mitteln und den Einsatz befähigter Künstler. Die Maleereien der Grotta di Fumane waren dagegen vermutlich funktional an den dortigen Siedlungsplatz gebunden und verlangten einen erheblich geringeren Aufwand.

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** *Soprintendenza ai Beni Archeologici per la Toscana, Firenze*

Übersetzung aus dem Französischen: Harald Floss

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Riparo Tagliente

Führung (presentation) Riparo Tagliente: Dr. M. Arzarello, Dr. F. Fontana, Prof. A. Guerreschi, Prof. C. Peretto & Dr. U. Thun Hohenstein.

The site of Riparo Tagliente (Stallavena di Grezzana, Verona) is situated in the Lessini Mountains on the left slope of the Valpantena, at 250 m a.s.l., near the village of Stallavena (Grezzana, Verona). The opening of the shelter is at the foot of a small rock wall formed by a bank of oolitic limestone, cropping out at the base of the western slope of Monte Tregnago. Discovered in 1958 by Francesco Tagliente, the site was initially investigated by the Museo Civico di Storia Naturale of Verona (1962-64). Excavations were then resumed (1967) by the University of Ferrara, initially under the direction of P. Leonardi, then by A. Broglio and currently by A. Guerreschi.

The stratigraphic series, which was deposited in the Upper Pleistocene, can be divided into two main deposits separated by an erosion surface: the lower one, datable to the early and middle Würm, contains Mousterian and Aurignacian industries, while the upper one dates back to the Late Glacial, and is characterised by Epigravettian industries. The lower stratigraphic series begins with deposits formed by the colluvium of external and thermoclastic sediments (levels 52-44) where pollen analyses show the presence of a grassland with Scotch pine and a cold and dry climate. Above there is a massive rockfall derived from the degradation of the walls of the rockshelter (levels 43-40), which indicate a climatic deterioration accompanied by a decrease in arboreal cover. In the up-

per part of the series (levels 39-31) loess sediments prevail, while the arboreal cover become almost non existent. The industries of these deposits are Mousterian and characterised by an high presence of SSDA, Levallois and Discoid methods all along the sequence and the introduction of blade production starting from level 37. At the top of this series and in apparent stratigraphic continuity level 25 corresponds to the formation of a soil and contains an Aurignacian industry with *Dufour* bladelets mixed up with some Mousterian and Epigravettian evidence.



The upper stratigraphic series has an irregular thickness being thinner in the internal part and thicker in the external one, due both to the presence of the river erosive escarpment leaning towards the outer part of the shelter and to human activities that caused accumulation of different materials especially in the outer zone. In the external area the lower part of the Epigravettian sequence (levels 18-15) is constituted by a coarse breccia in a loess matrix; pollen analyses indicate a vegetation of a cold and arid climate and faunal remains are dominated by ibex. Then there follow deposits which are formed by clasts in a loess matrix (14-5) and very rich with evidence of human occupation. The vegetation is that of a temperate climate, characterised by a grassland wood with conifers and deciduous trees; red deer progressively becomes the best represented animal species. Taking into account the radiocarbon dates which range from 13430 ± 180 (levels 15-16) to 12040 ± 170 BP (layers 10-8) the Epigravettian series of Riparo Tagliente can be referred to the period between the Ancient Dryas and the first part of the Allerød interstadial. Therefore this site represents the most ancient known deposit of the Southern slope of the Alps to be reoccupied by human groups after the last glacial maximum.

Extended excavations carried out in the Epigravettian deposits have allowed finds of particular importance to be brought to light, including a burial, various decorated objects, and a series of dwelling structures in the inner area of the shelter. The area immediately outside the shelter is also characterised by a pronounced organisation of space with several differentiated concentrations of various categories of findings, especially lithic artefacts and faunal remains.

Samstag, 14.04.07 – Saturday, April 14th

Exkursion III:

The Archaeological section of the Museo Civico di Riva del Garda

Führung (presentation): Soprintendenza di Trento (Archäol. Denkmalpflege Trento).

The Archaeological section of the Museo Civico di Riva del Garda starts with the flint tools of the Palaeolithic and Mesolithic found in different sites of the Monte Baldo.

The most important findings are seven statue-stelae of the Copper Age (3rd millennium B.C.) found during the excavation work for the construction of the new hospital of Arco. The stelae show several characteristic weapons such as axes, daggers and halberds, but also ornaments. The Bronze Age is represented by the lake dwellings of Molina di Ledro and Fiaavè Carera. Many objects and some reconstructions are displayed.

The Iron Age is represented by an exceptional discovery on Monte Altissimo, at an altitude of 1950 above sea level, in a pit about 70 metres deep, called Busa Brodeghera. At the bottom of the pit a skeleton of a young man was found that can be dated back to the 6th – 5th century B.C. The archaeological site of Monte San Martino represents an important cult site used during the late Iron Age and in the roman period, when it was transformed in a sanctuary.

Since the 1st century B.C. the romanization of the Garda lake took place. The territory was subdivided in order to dedicate vast fertile lands to agriculture. One of the region's most significant findings is a large stone basin dating back to the 1st century A.D. The basin was part of a fountain destined to embellish one of the aristocratic *villae* located on the lake shores.

Upper Garda has revealed a considerable number of roman findings. The most significant ones come from settlements (at least nine), from production sites (two cases) and especially from cemeteries (more than twenty five). The roman cemeteries are characterised by the incineration and inhumation rites. Several tombs were discovered intact together with their burial goods, now displayed in the Museum.

The Pile Dwelling Museum of Ledro Lake

Führung (presentation) Museo delle Palafitte di Ledro: Dott.ssa Romana Scandolari.

In the autumn of 1929, when the level of Lake Ledro was appreciably lowered to supply the hydroelectric plant being built at Riva on Lake Garda, after thousands of years a lake-settlement re-emerged into the light of day. Along the southern shores of the lake a forest of wooden piles broke the surface, bearing all the marks of their long immersion. At first they were thought to belong to some long-forgotten sluice built to control the level of the lake, but soon they were shown to be the remains of the largest prehistoric site to have been uncovered hitherto in Italy and a site which provided archaeological evidence of European dimensions. From its remains the lake-settlement was shown to have spanned the period from the New Stone to the Bronze Ages. The news created a stir in the archaeological world. The site was excavated and finds - including what appeared to be a hut floor - were recorded. Then the water-level rose once more and all was submerged, until the drought of 1936-37 lowered the level of the lake significantly and enabled further excavation to be undertaken.

Over the centuries lake dwellings, built on piles, underwent little change, merely adapting to the local ecology a building technology which took advantage of the proximity of water to pro-

vide a source of food in fishing and defence against attacks of man and beast. An additional incentive might be the special suitability of the site to its surroundings, since the sinking of wooden pile pose considerable technical difficulties.

THE LAKE-DWELLERS

The extreme scarcity of human remains makes any statement on the physical characteristics of the inhabitants highly speculative. However, by analogy with those from other contemporary lake-settlements, they probably averaged about 5 feet in height.

As with other prehistoric lake-settlements there is a total absence of inhumation at Ledro, which inclines to the view that lake-dwellers practised the rite of cremation of their dead. Critical opinion varies as to the date of the foundation of the Lake settlement between the upper limits of 2000-1800 BC and the lower limits of 1500-1200 BC.

FOOD

A valid assessment of the nutrition and way of life of the villagers may be made solely from the remains of meals. All the animals provided basic foodstuffs, of which their brains and marrow were important elements, since long bones and skulls are habitually found split open. Given the abundance of freshwater oyster shells, it is natural to suppose that fish and shellfish provided an especially important part of their diet. This also comprised cooked vegetables and a porridge of cereals and frequently of acorns, too, the remains of such meals often being found encrusted on pots. Another convenient source of food was wild or cultivated fruits and berries - hazelnuts, strawberries, elderberries, raspberries, wild pears, cornel, etc. The seeds of the latter have been found in such vast quantities as to suggest that the fruit was fermented to produce an alcoholic drink.



STONE

At the dawn of human history roughly polished stone-chippings or highly polished flints provided materials which combined with wood in a whole range of tools. Although the Ledro settlement reached its apogee in the Bronze Age, there is a comparative wealth of evidence to show that stone was still used for a wide variety of tasks.

Flint implements are in the majority, small in size and, because of the fissile nature of the stone, confined to cutting tools. Laurel-leaf arrowheads are uncommon, lance-heads scarce and scrapers in the majority. Axes are usually small in size with the longer side curved and the shorter straight. An unique find was an unfinished axe of the 'stirrup' type, with a hole for the handle. Sandstone was used for burnishers and from the fragments found was also hollowed into moulds for bronze clubs. A neighbouring glacier moraine provided crystal for beads. Volcanic stone, generally granite, was comparatively widely used for hand-mills, clubs and hammers. The amber which regularly recurs on the site was clearly used for personal ornaments. Its provenance is unknown, but taken with other items of evidence would seem to point to a barter-trade with Central European lake-settlements.

WOOD

Wood was a day-to-day material of prime importance to the ancient people of the Alps. Apart from its obvious use for the piles and platforms and for the palisade around the settlement, wood, which the lake-dwellers worked with confident skill, was used to make the majority of household utensils, weapons for war and hunting, canoes, etc. Clearly then, both in range and numbers, wooden objects once far outnumbered those which have survived to be catalogued by the archaeologists. Cutting implements were used to carve the smaller items; the larger were first burned away before being planned or carved. The commonest objects are bowls, dishes, plates or the handles of unknown implements - most probably used to prepare food. Weapons comprise clubs with spherical heads, throwing sticks and bows. The discovery of a plough with a sharply-pointed coulter and a pole for the beam shows the agricultural use of wood. A dug-out canoe is a class of find which provides ample scope for creative theorizing.



BRONZE

The catalogue of objects in bronze is both rich and varied, bearing in mind that this was a precious metal used for luxury items and one which could easily be melted down and used again. The fact that there is very little evidence of bronze-working at Ledro may be explained by the unsuitability of highly flammable wooden huts to prehistoric craftsmen's forges. The right and proper place for their workshops would have been on the shore - free from the fear of fire and close to the source of fuel. The items most commonly discovered during excavations were axe-heads and splendid triangular-bladed daggers, decorated in intaglio and of a high level of craftsmanship. Their hilts are usually formed by a series of bronze rings. Personal ornaments comprise pins of different shapes - many similar in style to those found in Central European lake-settlements - wire twisted into spiral and bronze 'crowns' which were worn on the head, probably as badges of rank. Such crowns are particularly rare and no less than four examples have come from Ledro.

HORN AND BONE

Animal horn and bone provided implements for a wide range of uses. The tarsal and cubital bones of various animal species were carved into awls and occasionally used to make genuine daggers. Other bone objects included small spatula, needles, decorated bangles, buckles, wrist-guards for bowmen, etc. Antlers of the red deer were used in various ways and their relative plenty is hardly surprising given that they are shed each year by the stags. They were used as hammers and punches and as the shafts of metal tools, or else were bored to take wooden handles. Their points were used to make patterns on pottery. There are also two combs for carding wool or flax, made of antler. The antlers of the roe-buck are far less frequently encountered, but were put to the same uses.

POTTERY

The variety and quantity of pottery at Ledro is truly vast, type, shape and size differing enormously. The coarse clay is broken down by the addition of minerals to produce a paste which is often deli-



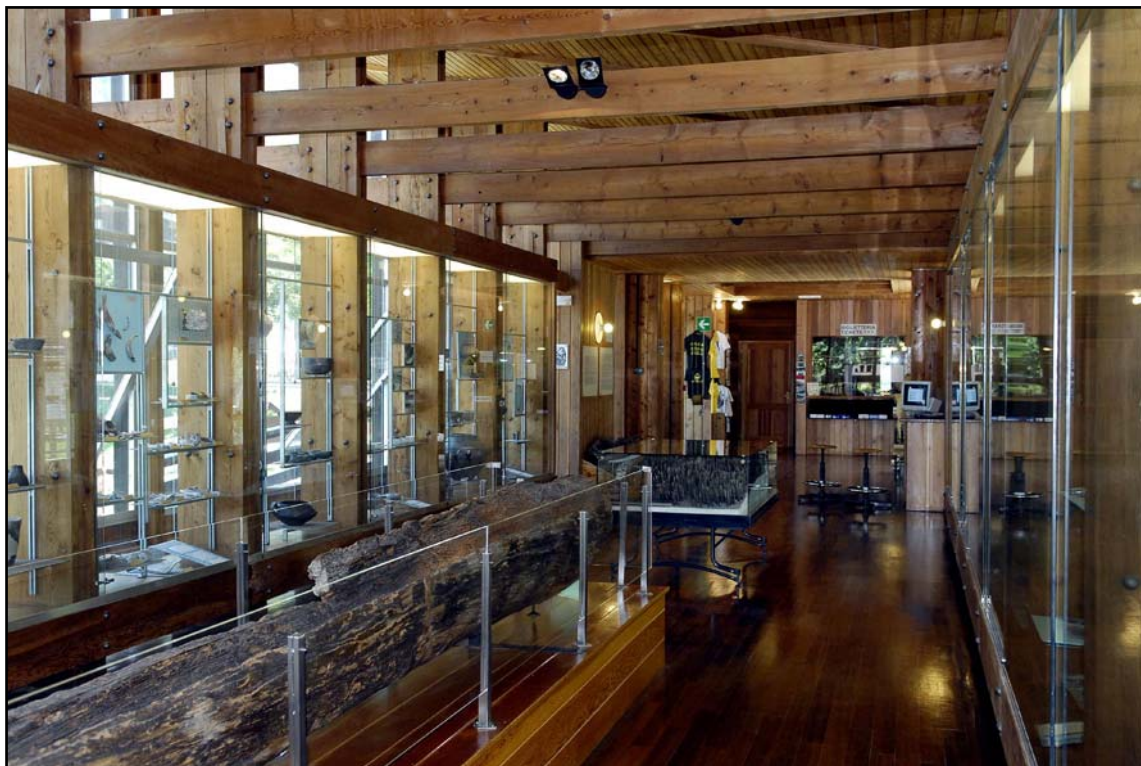
cate, smooth and glossy. The colour is a monotonous black, darkish brown or red, except when it has been blanched by overheating when a hut burned down. The pottery varies in size.

Of most common occurrence are the large biconical-bodied jars used for storing foodstuffs and decorated, almost without exception, in ribbed patterns either incised into the body of the pot or applied to its surface.

They often encircle or spiral round it in a style which survives to this day. There are many different types of beaker, bowl and small cup, which have often survived intact because of their very smallness. Typologically they differ widely. However, if pottery is classified by number of finds, the order is as follows: loom-weights, spindles, spools, small ladles for bronze-working, platters with slightly raised rims, pipes used as bellows, rounded disks which may have been used as gaming-tokens and small rectangular segments impressed before firing with a dot and cross pattern. As a simple matter of interest the use should be mentioned of a binding material used to patch vessels or make them watertight, as well as to mend cracks across their surface. The same substance was used as an adhesive to fix flints to wooden handles or ornaments to different mounts.

WEAVING

Plentiful finds of loom weights, as well as spindles, sometimes decorated with dot-patterns, carding combs made of antler, bone needles and even strips of woven material are all evidence of this activity. The cloth was woven from pure linen thread, the width of the weft varying considerably, and was found in strips, in superimposed squares (perhaps for patchcords) and in rolls, one of which could only have been a girdle. The most interesting aspect of this find - which may well be unique - is that the outer warps, into which the weft is woven, form a continuous unbroken thread, presupposing the use of small loom. Although there is no proof that it was the case, it is perfectly reasonable to suppose that the cloth was coloured with vegetable dyes, as is the case with the oldest surviving textiles. It is worth adding that the absence of any woollen stuffs is due to the rapidity with which they deteriorate.



Das Pfahlbautenmuseum des Ledrosee

Eine der bedeutendsten Ansiedlungen des Pfahlbautentyps in Italien und vielleicht sogar in ganz Europa.

Nach tausenden von Jahren traten 1929 die Funde der Pfahlbautensiedlung von Ledro ganz zutage. Als der Wasserspiegel des Sees, der zu hydroelektrischen Zwecken für das Kraftwerk von Riva del Garda angezapft worden war, stark abgesenkt wurde, kam eine weite, mit Pfählen versehene Zone zum Vorschein. Diese Pfähle, die schon bekannt waren und die die Bevölkerung für eine alte Schutzanlage gehalten hatte, erwiesen sich als eine der bedeutendsten Ansiedlungen des Pfahlbautentyps in Italien und vielleicht sogar in ganz Europa.

Da viele Funde auf die Bronzezeit zurückgehen, werden die Pfahlbauten von Ledro als eine Siedlung aus dem oberen Neolithikum angesehen. Ihre Entdeckung wurde bald bei Archäologen bekannt. Die Ausgrabungen, die unternommen wurden, brachten zahlreiche Funde von ausserordentlicher Bedeutung ans Tageslicht, auch einen grossen Holzbelag, wahrscheinlich den Boden einer Hütte. Der Wasserspiegel wurde dann aber wieder angehoben und alles wurde nochmal vom Wasser überschwemmt.

Erst 1936/37, als der See wegen einer sehr trockenen Saison wieder sehr niedrig war, wurden die Ausgrabungen weitergeführt. Das technische Mittel des Pfahlbaus, das man als ökologische Anpassung an die örtlichen Gegebenheiten verstehen muß, und das im Laufe der Jahrhunderte kaum Änderungen grundlegender Art erfuhr, muß im Blick auf die Vorteile gesehen werden, die es wegen der Nähe des Wassers bietet: Sicherheit gegen die Angriffe durch Tiere oder Menschen und natürlich die Erleichterung des Fischfangs. Hiervon abgesehen, kann der Bau auf dem Wasser allein im Bezug auf die Umgebung baulich zweckmäßig sein, obwohl das frei stehende Gerüst grosse technische Schwierigkeiten mit sich bringt.

DIE BEWOHNER

Die wenigen Funde erlauben nur begrenzte Rückschlüsse auf die körperliche Konstitution der Menschen. Ausgehend von anderen Pfahlbautenbewohnern der Bronzezeit darf man eine Durchschnittsgröße von 156 Zentimetern annehmen.

Auch in Ledro, wie in den anderen vorgeschichtlichen Pfahlbautensiedlungen, hat man das Fehlen von Gräbern festgestellt. Daraus kann man schließen, daß die Pfahlbautenbewohner ihre Toten verbrannten. Wann haben die Pfahlbautenbewohner den Ledrosee besiedelt? Die Meinungen darüber gehen auseinander: die älteste Geschichtszahl, die den Beginn der Besiedlung anzeigt, liegt zwischen 2000 und 1800 v. Chr., die jüngste zwischen 1500 und 1200

FAUNA UND FLORA

Die archäologischen Funde offenbaren eine Tier- und Pflanzenwelt, die sich nicht sehr von der unterscheidet, die man heute vorfände, wenn man den verändernden Einfluß der Menschen ausschliessen könnte. Unter den Weichtieren wurden besonders Schalen der *Anodonta mutabilis* Cless (Süßwasserauster) in weiten Abschnitten gefunden. Ochsen, Ziegen, Schafe und Schweine waren die häufigsten nützlichen Haustiere. Der Hund, den die Pfahlbautenbewohner von Ledro als Haustier hielten, gehört zu einer mittleren Entwicklungsform zwischen der Steinzeit, der Eisenzeit und der Römerzeit. Anhand der Kiefer von Bären, die gefunden wurden, kann man feststellen, daß die Bären hier im Vergleich zu der anderen europäischen Fauna eine durchschnittliche Größe hatten, obwohl es auch Funde gibt, die das Vorhandensein von größeren Exemplaren bestätigen. Über den Hirsch, das Reh, den Fuchs und die Gemse kann man keine besondere Angaben machen. Auch ein paar Funde von Wildschweinknochen sind zu verzeichnen. Wirtschaftlich war Ledro eine unabhängige Ansiedlung. Die heimische Fauna wurde ziemlich gut ausgebeutet und genügte den Bedürfnissen der Bevölkerung. Über die Wildtiere kann man nicht viel sagen, sie wurden wahrscheinlich nur zeitweise gejagt und verzehrt. Die Haustiere wurden ohne besondere Aufwand gezüchtet. Die Pfahlbautenbewohner betrieben im Sommer eine extensive Zucht; im Winter ergab sich das

schwierige Problem der Fütterung und deswegen wurden wahrscheinlich auch die jüngsten Tiere geschlachtet.

NAHRUNGSMITTEL

Wir können uns aufgrund der gefundenen Speisereste ein ausreichend klares Bild von dem Lebensstandard und den Nahrungsmitteln machen. Alle Landtiere wurden zur Ernährung verwendet, und wahrscheinlich wurde das Fleisch völlig von den Knochen gelöst. Das Knochenmark und das Hirn stellten nahrhafte Lebensmittel dar, was die Funde zerbrochener Schädel und langer Knochen beweisen. Man darf annehmen, daß auch Wassertiere häufig als Nahrungsmittel dienten. Die Ablagerungen von Seemuschel-Resten, besonders der *Anodonta mutabilis* Cless, die geborgen wurden, beweisen unzweifelhaft, daß auch die Wasserfauna der Ernährung diente. Die am häufigsten gefundenen pflanzlichen Speisen hatten sich häufig am Boden der Töpfe abgelagert. Die zahlreichen angebauten und natürlich wachsenden Früchte und Beeren waren auch eine sichere Nahrungsquelle: die Haselnuß, die Erdbeere, die Himbeere, die wilde Birne, der Holunder, die Kornelkirsche usw. Die Samen der Kornelkirsche, die in großer Menge gefunden wurden, offenbaren, daß diese Frucht viel verwendet wurde. Es ist wahrscheinlich, daß sie zur Gärung gebracht und aus ihr ein alkoholisches Getränk zubereitet wurde.

STEINGERÄTE

Der zersplitterte, geglättete und grob bearbeitete Stein stellt neben dem Holz ein Gebrauchsmaterial dar, das sich seit dem Beginn der Menschheit für alle Werkzeuge eignete. In den Pfahlbauten von Ledro, die während der Bronzezeit ihre Blüte erreichten, ist die fortdauernde Nutzung von Stein als Rohmaterial in verschiedenen Bereichen deutlich belegt. Die kleinen Gegenstände aus Feuerstein beweisen, daß aus diesem Material, das sich wegen seiner Härte und Sprödigkeit eignet, seltene Dolche mit Lorbeerblattspitzen, kleine Pfeifspitzen und Schaber hergestellt wurden. Die gewöhnlich kleinen Beile vom „Bügeleisen“-Typ mit einem Loch für den Stiel wurden nur in einem Exemplar geborgen. Aus Sandstein sind die Poliersteine und die Bruchstücke von Formen für den Bronzeuß. Aus den Felsblöcken und den kristallinen Geröllsteinen, aus denen die hiesige eiszeitliche Moräne besteht, sind einige häufig verwendete Geräte herausgearbeitet worden: die Herdsteine, die meist aus Granit sind, die Steine zum Getreidemahlen, Keulen und Hämmer. Die Bernsteinperlen, auf die man in den abgelagerten Schichten recht häufig trifft, dienten zweifellos als Schmuck. Über ihre Herkunft kann man nichts Genaues sagen, obwohl die Annahme berechtigt erscheint, daß der Bernstein durch die Handelsbeziehungen mit den böhmischen Pfahlbaubewohnern hierher gekommen ist.

HOLZ

Bei allen alten Alpevölkern hat das Holz eine erstrangige Rolle als Gebrauchsmaterial gespielt. Abgesehen von der Verwendung beim Bau der Hütten, der Schutzzäune usw. eignete sich das Holz, das die Pfahlbautenbewohner meisterhaft bearbeiten konnten, auch zur Herstellung der meisten Haushaltsgegenstände, Jagd- und Verteidigungsgeräte, Boote usw. Wir können uns auch vorstellen, daß die Geräte noch vielfältiger und zahlreicher waren, als es uns die Funde beweisen. Das Holz wurde entweder direkt mit der Klinge bearbeitet, wenn es sich um Gegenstände von beschränkter Größe handelte, oder die Form wurde zuerst unter Zuhilfenahme des Feuers vorbereitet und dann durch Schneidwerkzeuge und glättende Schleifverfahren weiter bearbeitet. Die am häufigsten vorkommenden Gegenstände sind Näpfe, Pfannen, Hackbretter und Griffe, die in ihrer Nutzung schwer zu interpretieren sind. Sie dienten wahrscheinlich zur Speisezubereitung. Als Waffen sind die Keulen mit kugelförmigem Kopf, jene eigenartigen spindelförmigen Gegenstände, die als Bumerangs beschrieben werden, und die Holzbögen anzusehen. Die Verwendung von Holz in der Landwirtschaft bezeugt uns der bekannte Fund eines Pfluges mit kräftiger Spitze und einer Zugstange. Funde von großem wissenschaftlichem Wert sind auch die Einbäume.

BRONZE

Funde bronzenener Gegenstände sind reich und vielfältig. Dabei muß man sich die Kostbarkeit des Materials, seine Verwendung bei Herstellung von feinen Gebrauchsgegenständen und den Vorteil und die Leichtigkeit des Wiedereinschmelzens zu anderen Zwecken vor Augen halten.

Die relative Seltenheit von Funden, die mit der Metallbearbeitung zusammenhängen, kann einfach erklärt werden, wenn man bedenkt, daß die leicht entflammaren Hütten unzuweckmäßig und für das Schmelzen nicht geeignet waren.

Die Werkstätten hatten den besten Standort am Ufer, wo sie sicher und der Brennstoffversorgung näher lagen. Die Gebrauchsgegenstände, auf die man bei der Ausgrabung am häufigsten traf, waren Beile und herrliche Dolche mit dreieckiger Klinge, die mit dichten und fein ausgeführten Mustern verziert sind. Der Griff dieser Dolche ist normalerweise aus Bronzeringen zusammengesetzt.

Die Schmuckgegenstände bestehen aus Anstecknadeln verschiedener Gestalt (unter denen einige denen aus den böhmischen Pfahlbauten gleichen), aus zu Spiralen gedrehten Bronzefäden, und aus bronzenen Kronen, die, wahrscheinlich als Rangabzeichen auf dem Kopf getragen wurden. In Ledro wurden vier Exemplare von solch eigenartigen und seltenen Kronen geborgen.

WERKZEUGE AUS HORN UND KNOCHEN

Vielfältige Dienste leisteten die Geräte aus Horn und Knochen. Aus den Fußwurzel- und den Ellbogenknochen verschiedener Tierarten stellte man Ahlen und Pfrieme und manchmal auch Werkzeuge her, die die Größe und Nutzenwirkung wirklicher Dolche hatten. Aus den Knochen wurden kleine Spateln, Nadeln, Zierreifen, Spangen, Pulsschützer für Bogenschützen hergestellt.

Auf vielfältige Weise wurde Hirschhorn verwendet, dessen relative Häufigkeit nicht überrascht, wenn wir bedenken, daß diese Tiere alljährlich ihr Geweih wechseln.

Aus Hirschhorn sind Hämmer, Schlägel oder auch Stiele für steinerne oder metallene Geräte. Horn und Knochen wurden durchbohrt und mit einem Holzstiel versehen. Außerdem bildeten die seitlichen Aeste ein Gerät, das zum er Keramik benutzt wurde. Aus Hirschhorn sind auch zwei elegante Webkämme.

KERAMIK

Die zahlreichen und vielfältigen handgemachten Gegenstände aus Keramik, die in Ledro geborgen wurden, sind von verschiedener Form. Die im allgemeinen grobe und durch verschiedene Mineralzusätze mager gemachte Tonmischung zeigt sich hier oft fein, gut geglättet und poliert. Die Farbe ist immer dunkel: schwarz, bräunlich oder rötlich. Nur manchmal ist sie heller, wenn die Töpferwaren durch Feuersbrünste zu stark gebrannt worden waren.

Die Keramiken haben sehr verschiedene Größen. In einer statistischen Bewertung der Häufigkeit nehmen die grossen kegelstumpfförmigen Krüge für Esswaren den ersten Platz ein. Diese Krüge sind fast immer nach Art der Schnurkeramik verziert; meistens ist die Dekoration reliefartig herausgearbeitet, manchmal ist sie aber auch aufgelegt und zieht sich spiralförmig um das ganze Gefäß. Die einfache geometrische Dekoration entspricht durchaus heutigem Geschmack. Häufig traf man auf verschiedene kleinere Krüge, Schalen und Tassen, die dank ihrer kleinen Größe oft unbeschädigt geborgen werden konnten.

Ebenfalls aus Ton sind die folgenden Geräte, die wir ihrer Häufigkeit nach aufzählen möchten: Webstuhlgewichte, Wirtel, Schwungringe, Schöpflöffel zur Handhabung der geschmolzenen Bronze, Teller mit leicht nach oben gebogenem Rand, „zuffoli“, eine Art von Pfeifen, die das Endstück der Rohre zum Feueranfachen bildeten, kleine rundliche Scheiben, die als Pfand bei Spielen gedient haben mögen, kleine rechteckige Stücke mit Markierungen und Punktierungen, die vor dem Brennen eingedrückt worden sind.

Als Kuriosität mag erwähnt werden, daß sehr häufig ein Klebstoff zum Ausbessern oder zum Dichten der Töpferwaren verwendet wurde, und das auch bei Rissen, die sich über das ganze Gefäß zogen. Es handelt sich um den gleichen Kitt, der zur Befestigung von Steingeräten an Holzgriffen oder von Verzierungen an verschiedenen Gefäßen verwendet wurde. Einige kleine Mengen dieses Klebstoffs, die in ihrer Gestalt Tannenzapfen ähneln, sind in den Ausgrabungsschichten auf-

gefunden worden. Den Analysen nach bestehen sie aus Terpentinharz, der mit einem unbestimmbaren zermahlenen Material vermischt worden war.

WEBEN

Webstuhlgewichte, Wirtel, die Manchmal mit Punkten verziert sind, Webkämme, Nadeln aus Knochen sowie Stoffstreifen geben eine ausreichende Auskunft über die Technik des Webens. Der Stoff wurde aus reinen Leinenfäden gewebt und zwar manchmal recht dicht und manchmal lockerer. Es wurden Fetzen in aufgerollten Streifen oder übereinandergelegten Vierecken geborgen. Ein wichtiges Fundstück ist ein wirklicher Gürtel. Es ist vor allem dadurch von Interesse, daß der Schuß am Rand ohne Unterbrechung mit der Kette verwoben ist, was die Verwendung eines offensichtlich recht kleinen Webstuhls vermuten läßt. Wir dürfen uns auch vorstellen, obwohl wir keinen Beweis dafür haben, daß die für die Bekleidung bestimmten Webwaren gefärbt wurden, und zwar wahrscheinlich mit aus Pflanzen gewonnenen Farben, wie es schon in Vorzeiten üblich war.

Das neue Pfahlbautendorf

An den Ufern des Ledrosee (Trentino), neben dem Museum und der Ausgrabungsstätte, hat ein Pfahlbautendorf der Allgemeinheit zugänglich gemacht, um die Alpenurgeschichte zu erfahren.

In demselben Platz ist es möglich die Spuren von einem der wichtigsten Pfahlbautendörfer zu beobachten, das durch das klare Wasser dieses Alpensees sich gehalten hat; die archäologische Sammlung, die im Museum ausgestellt ist, zu erforschen; und erfahren, wie die Bewohner des Pfahlbauten vor über 4000 Jahren gelebt haben.

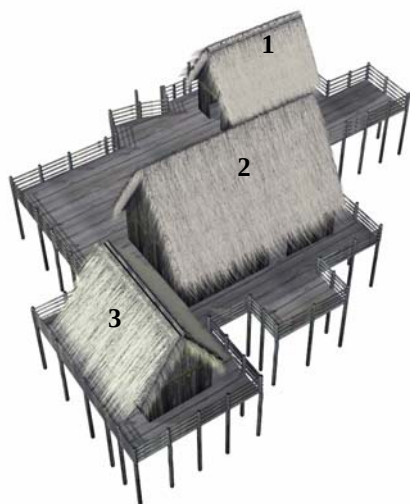
Die drei Hütten, in der Art eines Dorfstückes gestellt, sind das Ergebnis von einem Projekt des Naturwissenschaftlichen Museums von Trento. An seinem Entwurf haben auch die Oberaufsicht über die archäologischen Güter der Provinz Trento, 3die Archäologen der Universitäten von Trento und Padova und anderen wissenschaftlichen Berater zusammengearbeitet.

Das neue Dorf vom Ledrosee ist den wahrscheinlichen Wiederaufbau einer Pfahlbautensiedlung, die an den Ufern von Alpenwasserspiegeln vor über 4000 Jahren sich befinden konnte. Die Verwendung von Holz mit höheren Schnitten und Dicken als solche, die in der Urgeschichte benutzt wurden, und die Anwendung von einigen modernen Bautechniken, die den Regeln der experimentellen Archäologie entsprechen, wurden für unerlässlich gehalten, um den Willen, die archäologische Realität zu zeigen, und um die Sicherheit der Besucher zu versichern. Die Holzplattform steht halb auf dem Boden und half auf Palisaden, die dem Bett vom Ponale Bach entlang sind.

Die drei Hütten haben verschiedene Größe und zeigen verschiedene Aspekten des Lebens und der Aktivitäten des Dorfes: Landwirtschaft, Viehzucht, Fischfang und Jagd. Außerdem, dank einem entwickelten Güteraustauschsystem mit den anderen Pfahlbautendörfern, hatten seine Bewohner Rohstoffe, Wertgegenständen und Machtsymbolen zur Verfügung.

- **Die Hütte 1** (neben dem Museum) ist die Hütte des Handwerkers: es gibt vielen Instrumenten und Wiedergaben der Funden, die an Bronzebearbeitung, Zimmererarbeit, Leinweben, Netzherstellung, Kieselanschlagen, Tonvermischung erinnern.
- **Die Hütte 2** (die größte) ist sowohl Wohnung, wo man die Haustätigkeiten (weben, nähen, kochen, mahlen, ausruhen) erledigt, als auch Treffpunkt zwischen den Häuptling und seinen Stamm, deshalb befinden sich dort auch viele Wertgegenständen.
- **Die Hütte 3**, die auf der Struktur „Stelzbau“ liegt, ist anders gebaut: ihr Gerüst ist leichter, weil sie als Abstellraum für die Werkzeuge gedacht wurde (in Notfällen war sie auch als Zuflucht für Ziegen und Schäfer benutzt).

Der wissenschaftliche Aufbau wurde natürlich von den Archäologen des Pfahlbautenmuseums unterstützt: sie sind die Urheber und Veranstalter verschiedenen kulturellen Unterhaltungsaktivitäten über die Urgeschichte, um eine unvergessliche Erfahrung mit Familie und Freunden zu erleben.



Das neue Pfahlbautendorf in Zaben

Die Fläche der Plattform: 300 Qm;
 Die Fläche der Hütten: 11, 15 und 20 Qm;
 Es wurden 70 Kubikmeter von Lärcheholz mit Pfählen bis 9 m lang benutzt;
 Die Plattform steht auf 130 Pfählen;
 Für die Dächer wurden 2500 Schilfrohbündel benutzt;
 Die Baustelle wurde im September 2005 eröffnet und, mit einer Winterpause von 4 Monaten, im Juni 2006 geschlossen;

Das Museum ist eine thematische Abteilung des Naturwissenschaftlichen Museums von Trento und wurde in 1970 gegründet, um einigen Funden des Pfahlbautendorfes zu veröffentlichen. Die Archäologen betrachten das Dorf als ein den wichtigsten von der Bronzezeit auf den Alpen. Das Museum wurde am Ufer des Sees gebaut, direkt neben den Ausgrabungsstätten und sammelt eine reiche Dokumentation von Gegenständen und Werkzeugen: das Ergebnis von fünfzig Jahren Ausgrabungen und Untersuchungen den Resten der alten Grundbauten, die durch die Glasfenster noch sichtbar sind.

Bis zu diesem Jahr gab es nur eine Hütte, die nach den Bauhypothesen gebaut wurde. Diese Art vom Bau hat was von der Einsiedlung geblieben war mit ähnlichen europäischen Bauarten verglichen. Es geht um eine Konstruktion von großer visueller Wirkung, die von weitem die Lokalisierung der Einsiedlung ermöglicht und das Symbol des Tales geworden ist.

Der Erfolg des Museums ist vor kurzem entstanden: seit 1996 hat es den Besuchern Archäolabors, Besichtigungen mit Unterhaltung, historische Vertiefungen mit interaktiven Geräten und ein spannendes Sommerprogramm (dies Jahr war das zehnte Jubiläum von Palafittando) vorgeschlagen, die tausenden von Studenten und Familien einbezogen haben. Der Bau von Bogen und Pfeilen, die Tonverarbeitung, Spinnen-, Färbung- und Webkunst des Leines und der Wolle und die berühmte „urgeschichtliche Brotzeit“, wo der Besucher in Mehl die Getreide umwandeln und dann Brot kocht, das er, zusammen mit den typischen Produkten aus dem Ledrotal, isst.

Diese Aktivitäten von „nachnehmender Archäologie“ sind von dem Publikum sehr geschätzt und haben die Idee des neuen Projektes von drei Pfahlbautenhütten eingegeben. Das Ergebnis ist ein Museum en plein air, wo der Besucher die Gegenstände anfasst und an die Aktivitäten der Pfahlbauteneinwohner teilnehmen darf.

Mit dem Wiederaufbau der drei neuen Hütten ist das Pfahlbautenmuseum von Ledrosee eine der wichtigsten italienischen Ausgrabungsstätten geworden, wo die Kultur zusammen mit interaktiven Erklärungen den uralten Einsiedlungen vorgestellt ist. Ein Platz, wo die Archäologie nicht nur zu beobachten ist, sondern auch zu erfahren.

Apertura e orari del Museo delle Palafitte del Lago di Ledro
 1 marzo - 30 giugno / 1 settembre - 30 novembre:
 9.00-13.00 / 14.00-17.00; chiuso lunedì.
 1 luglio - 31 agosto: 10.00-18.00
 Chiuso: dicembre, gennaio e febbraio

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Bericht zur 48. Tagung der Gesellschaft in Köln vom 18.– 22. April 2006

von Leif STEGUWEIT (Erlangen)

Im Jahre 2006 führte die Hugo-Obermaier Gesellschaft ihre Jahrestagung auf Einladung des Instituts für Ur- und Frühgeschichte in der Universitätsstadt Köln durch. Als eines der Zentren europäischer Urgeschichtsforschung bot das Rheinland zugleich das passende Umfeld, um mit interessanten Exkursionspunkten das 150-jährige Jubiläum des Neandertalers zu würdigen und zu feiern. Besonders erfreulich ist der stetige Aufwärtstrend der Teilnehmerzahlen auf den Tagungen der letzten Jahre, der mit ca. 150 gemeldeten Teilnehmern – viele davon Fachexperten auf dem Gebiet der Quartärforschung – hier in Köln einen neuen Höhepunkt erreicht hat. Neben den Mitgliedern aus Deutschland, Österreich und der Schweiz konnte die Gesellschaft auch zahlreiche Gäste aus weiteren europäischen Ländern begrüßen, wie aus Frankreich, Belgien, Tschechien, Rumänien und der Ukraine.

Der Tagungsverlauf

Tagungsort war ein Repräsentationsraum der Universität zu Köln im Hauptgebäude der Heilpädagogischen Fakultät. Nach Grußworten vom Dekan der Philosophischen Fakultät, Prof. Dr. H.-P. Ullmann und Gastgeber Prof. Dr. J. Richter vom Kölner Institut für Ur- und Frühgeschichte wurde die Tagung durch den Präsident der Gesellschaft, Prof. Dr. L. Reisch, feierlich eröffnet. Herr Reisch nutzte zugleich die Gelegenheit, den erstmals in der Geschichte der Gesellschaft ausgeschriebenen Hugo Obermaier-Förderpreis zu überreichen. Erster Preisträger der ab 2006 im Zweijahresrhythmus ausgelobten Fördersumme von 5.000 Euro ist Herr Philip Nigst M.A., der derzeit am Max-Planck-Institut für Evolutionäre Anthropologie in Leipzig promoviert wird. Die Förderung wurde – gemäß des Vermächtnisses der Stifterin – für ein Geländeprojekt an der berühmten Fundstelle Willendorf II in Niederösterreich vergeben, das im Sommer 2006 vom Preisträger begonnen wurde.

Das Vortragsprogramm des ersten Nachmittags war dem Alt- und Mittelpaläolithikum gewidmet, inklusive einiger Beiträge zur Vorbereitung auf die Exkursionen. Zunächst stellte J. Le-Tensorer mit seiner Baseler Arbeitsgruppe seine Forschungen zum Hummalien und dem Übergang zum Jungpaläolithikum an der syrischen Fundstelle Ain Hummal vor. D. Richter (Leipzig) ergänzte die Präsentation mit ersten Thermolumineszenzdaten zur Stratigraphie der Fundstelle. K. Breest (Berlin) referierte anschließend über mittelpaläolithische Fundstücke, die er gemeinsam mit K. Gerken (Helstorf) über viele Jahre im niedersächsischen Wendland geborgen hat. Nicht zuletzt mit der Entdeckung der Fundstelle Lichtenberg und der Tätigkeit am Öring-Paläolithikum hat sich Herr Breest einen wohlbekannten Namen in der niedersächsischen Paläolithforschung gemacht. Vor der Kaffeepause legte L. Fiedler (Marburg) neue Vorstellungen zur Interpretation der Neandertaler-Gräber von La Ferrassie dar, die für eine teilweise kontroverse Diskussion sorgten.

Im zweiten Vortragsblock des Nachmittags wurden einführende Informationen für die Exkursion am Freitag gegeben, wobei die Lössprofile der Niederrheinischen Bucht und ihre archäologischen Fundschichten im Fokus des Interesses standen. Die Arbeitsgruppe um J. Richter und T. Uthmeier (Köln) berichtete über ihre Prospektionstätigkeit entlang der Abbaukanten im Braunkohletagebau Garzweiler. Anschließend präsentierte W. Schirmer (Düsseldorf) die Ergebnisse seiner langjährigen Arbeiten zur Lössgliederung am Niederrhein, wobei sein ehemaliger Assistent H. Kels die Diskussion mit seinen Ergebnissen zur Stratifizierung archäologischer Fundhorizonte weiter konkretisierte. Der Abend klang mit einem Empfang der Prähistorischen Gesellschaft Köln e.V. im Senatssaal der Universität aus. Dieser Verein, der sich die Vermittlung der Ur- und Frühgeschichte in der Öffentlichkeit auf die Fahnen geschrieben hat, ist aus einer bemerkenswerten Eigeninitiative Kölner Studierender entstanden. Nach einer Erläuterung der Vereinstätigkeit durch den Vorsitzenden begrüßte auch der Dekan der Mathematisch-Naturwissenschaftlichen Fakultät die geladenen Gäste.

Der zweite Tag stand mit Vorträgen zum Mittel- und frühen Jungpaläolithikum ganz im Zeichen des Neandertaler-Jubiläums. Hierzu stellten einige geladene Referenten aktuelle Forschungen des europäischen Umfeldes vor: Z. Mester (Miskolc) sprach über die Rekonstruktion der Grabungsgeschichte in der ungarischen Szeleta-Höhle, die in Verbindung mit neuen Datierungen interessante Interpretationen zulässt. V. Chabai und Y. Demidenko von der Ukrainischen Akademie der Wissenschaften gaben einen beeindruckenden Überblick über neue Forschungen in ihrem Land, wobei sowohl zum späten Neandertaler auf der Krim, als auch zum Charakter des Aurignacien in den osteuropäischen Löss-Steppen Stellung bezogen wurde. M. Anghelinu (Targoviste, Rumänien) schloß sich mit einem Überblick zur Erforschung des Jungpaläolithikums in Rumänien an. Er unterstrich die Aussagen Y. Demidenkos, wonach für diesen Raum nur mit Vorbehalt eine Korrelation der mittel- und westeuropäischen Technokomplexe möglich ist. Neben den Gastvorträgen wurden Forschungen zu deutschen Fundstellen vorgestellt, so von M. Heinen (Mönchengladbach) zum Szeletien-Fundplatz Zeitlarn, von T. Weber (Magdeburg) zum Rohmaterialverhalten im Alt- und Mittelpaläolithikum, von T. Laurat (Jena) zu den aktuellen Grabungen im Tagebau von Neumark-Nord, sowie von M. Beck (Erlangen) zur Aufarbeitung des mittelpaläolithischen Inventars vom Großen Schulerloch in Niederbayern. O. Jöris (Neuwied) diskutierte dann den Übergang vom Mittel- zum Jungpaläolithikum unter dem Aspekt der ^{14}C -Datierungen. Dabei wurden die methodischen Probleme des Datenbestandes deutlich, die u.a. mit dem Probenmaterial verknüpft sind.

Am Mittwochnachmittag folgten Referate zum Zeithorizont des Übergangs vom Mittel- zum Jungpaläolithikum in Süddeutschland, zunächst von P. Krönneck (Tübingen) anhand der Fauna vom Bockstein im Lonetal. Anschließend diskutierte S. Münzel (Tübingen) das Subsistenzverhalten des späten Neandertalers und frühen *Homo sapiens* am Beispiel der Daten vom Geißenklösterle im Aichtal. Die Ausführungen von H. Bocherens (Montpellier/ Tübingen) verdeutlichten, dass auch Daten zu südwestdeutschen Bärenpopulationen als chronologischer Gradient genutzt werden können. V. Sitlivy (Brüssel) stellte anschließend Untersuchungen aus der Krakauer Region vor, womit der Themenschwerpunkt abgeschlossen werden konnte. Einen weiteren spannenden Akzent setzten schließlich die Vorträge von T. Einwögerer (Wien) und U. Hambach (Bayreuth) zu der im Jahre 2005 entdeckten gravettienzeitlichen Säuglings-Doppelbestattung der Fundstelle Krems in Niederösterreich. Nach einer Schlussdiskussion fand der Abend einen geselligen Ausklang in der nahe gelegenen Gaststätte „Moritz“.

Der Donnerstag begann mit einem Schwerpunkt zum Thema „Siedlungsstrukturen“, der von Beiträgen der Neuwieder Arbeitsgruppe (M. Sensburg, F. Moseler, E. Turner u.a.) zu der kurz vor dem Abschluß befindlichen Auswertung des Fundplatzes Gönnersdorf eröffnet wurde. Interessante Ansätze zur Diskussion spätglazialer Strukturen boten auch Vorträge zur Ressourcennutzung am Beispiel der Fundstellen Champréveyres und Monruz von W. Müller (Neuchâtel), zur Interpretation der Fundstelle Orp (Brabant, Belgien) von S. Wenzel (Neuwied) und der Wohnplatzstrukturen des mesolithischen Fundplatzes Duvensee von D. Holst (Neuwied). Im Anschluß legte J. Kegler (Köln) Ergebnisse seiner Recherchen zur Altfundstelle Mas d'Azil dar.

Am Nachmittag wurden weitere Vorträge zum Spätpaläolithikum bis Neolithikum gehalten: K. Gerken (Helstorf) sprach zu Oldendorf (Lkr. Rotenburg/ W.), H. Lübke zu Ergebnissen des SINCOS-Projektes in den Küstengewässern der Insel Rügen, M. Bradtmöller (Köln) zu einem Ertebölle-Fundplatz an der Nordseeküste sowie B. Weninger (Köln) zum klimatischen „8.2 ka-Event“ und dem damit verbundenen Wandel in Westasien und Südeuropa. R. Heckendorf (Hamburg) referierte über ihre Prospektionstätigkeit zum Bovidien in Südmarokko, und schließlich sprach C. Pasda (Jena) über die Relevanz der Vorstellungswelt zum „Mythos Wildnis“ bezüglich der Interpretation paläolithischer Befunde. Nach dem Ende der Vorträge und vor der Mitgliederversammlung wurden im Foyer des Tagungssaals zahlreiche Poster vorgestellt, wobei eine Stunde lang Gelegenheit bestand, mit den Autoren zu diskutieren.

In der Mitgliederversammlung der Gesellschaft am Donnerstagnachmittag wurde bekannt gegeben, dass ein neues Herausgebergremium ab dem Band 55 die Geschicke des Jahrbuches QUARTÄR leiten wird. Zur Kostenreduzierung und Neuausrichtung wurde der bestehende Ver-

trag mit Abschluß des Bandes 53/54 aufgelöst und ein neuer Vertrag mit dem Verlag Marie Leidorf-Verlag GmbH (Rahden/ Westf.) abgeschlossen. Unter großer Zustimmung der Mitglieder gab anschließend T. Terberger bekannt, dass die Tagung 2007 unter der Führung des Museo Tridentino di Scienze Naturali in Trento (Italien) stattfinden wird.

Die Exkursionen

Zwei Tagesexkursionen, die speziell auf das Schwerpunktthema „Mittelpaläolithikum und frühes Jungpaläolithikum“ zugeschnitten waren, ergänzten das Vortragsprogramm:

Am Freitag führten Herr W. Schirmer, H. Kels, U. Böhner, J. Thissen, T. Uthmeier und U. Geilenbrügge in das Braunkohlenrevier der Niederrheinischen Bucht. Ein kleiner Führer im Tagungsheft erläuterte die Exkursionspunkte. Die zuweilen etwas schwierige Kost der Lößstratigraphie wurde durch die engagierten und lebhaften Ausführungen der Kollegen vor Ort jedem Teilnehmer nahegebracht. Den Anfang machte J. Thissen mit einer Führung an frisch präparierten Abbaukanten und Grabungsstellen des Tagebaus Inden, dem sich ein Besuch in der Außenstelle des Rheinischen Landesamtes für Bodendenkmalpflege in Titz-Höllen anschloß. Hier gab es Gelegenheit, Originalfunde aus den archäologischen Rettungsgrabungen des Amtes zu besichtigen; anschließend wurde eine deftige Exkursionssuppe gereicht. Am Nachmittag stand – unter der Führung von W. Schirmer – die Lössgliederung am Niederrhein aus paläoklimatischer Sicht im Mittelpunkt. Zunächst fuhren die Teilnehmer in den Tagebau Garzweiler, wo U. Lieven eine von seiner Arbeitsgruppe präparierte beeindruckende Lößwand vorstellte, von der im Winter zuvor für Ausstellungszwecke das „größte Lackprofil der Welt“ abgenommen worden war. Eine schöne Fotogalerie zur Retrospektive bietet Herr Lieven seitdem auf seiner Website an, unter:

<http://www.geolieven.com/fotografien/Obermaiergesellschaft2006/obermaiergesellschaft2006.htm>

Anschließend führte Herr Schirmer durch die Lößstratigraphie in der Ziegeleigrube Erkelenz (Abb. 2).



Abb. 2 – Herr W. Schirmer führt in der Grube Erkelenz

Zum Abschluß des Tages wurden die noch bestehenden Profile an der berühmten mittelpaläolithischen Fundstelle Rheindahlen bei Mönchengladbach besichtigt, eine der wichtigen westdeutschen Stationen mit einer Folge von Fundhorizonten aus der Zeit des Neandertalers (**Abb. 3**). Hier entwickelte sich nach einer Wortmeldung von Herrn T. Weber eine lebhafte Diskussion zur chronologischen Einordnung der Fundhorizonte aus Sicht der lithischen Inventare, die gegenüber der überzeugenden Darstellung der Lößstratigraphie jedoch nur schwer an Boden gutmachen konnte.

Die Exkursion am Samstag stand ebenfalls im Zeichen des Neandertaler-Jubiläums, zunächst mit der Fundstelle im Neandertal bei Mettmann und dem nahegelegenen Neanderthal Museum. Hier stellte Direktor G. Weniger den Exkursionsgästen das im Aufbau befindliche Projekt NESPOS vor. Es handelt sich hierbei um eine interaktive Datenbank mit dem Ziel, möglichst viele Fundstellen des Neandertaler-Zeithorizontes online zugänglich zu machen. Anschließend bot sich Gelegenheit, die Dauerausstellung des Hauses zu besichtigen. Nachmittags fuhr die Gesellschaft nach Herne, wo M. Baales im Westfälischen Museum für Archäologie durch die neu gestaltete Dauerausstellung führte. Ein abschließender Höhepunkt war die Einführung in die gerade im Aufbau befindliche Sonderausstellung „Klima und Mensch. Leben in Extremen“, die vom Ausstellungsteam erläutert wurde. Diese mit hochkarätigen Exponaten bestückte Sonderausstellung gehörte zu den offiziellen Events aus Anlass des 150-jährigen Jubiläums und stand unter der Schirmherrschaft der UNESCO sowie des Ministerpräsidenten von Nordrhein-Westfalen.

Die Tagung 2006 in Köln hat erneut gezeigt, dass die Hugo-Obermaier-Gesellschaft eine feste Größe auf dem Gebiet der Quartärforschung in Europa repräsentiert und sich auch außerhalb des deutschsprachigen Raumes eines wachsenden Interesses erfreut.

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Abb. 3 – Fundstellen von Rheindahlen – Gelegenheit zum Detailstudium am Profil

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