ALPine NETwork
for archaeological sciences

2006 lisboa uispp XV congresso

Culture2000

Colloquium 31

"Mountain environments in prehistoric Europe:

settlement and mobility strategies from the Palaeolithic to the early Bronze Age"

under the patronage of the UISPP Commission

"Civilisations Néolithiques de la Méditerranée et de l'Europe"

The C31 is organised by "ALPINET - Alpine Network for Archaeological Sciences". Founders partners are: University of Trento, Museum of Natural Sciences of Trento (Italy); University of Grenoble, University of Chambery (France); University of Zurich (Switzerland); Reiss-Engelhorn Museum of Mannheim (Germany); University of Innsbruck, Institute of Palaeontology of Wien (Austria); University of Ljubljana (Slovenia). Associated partners are: University of Ferrara, Italian Institute of Human Palaeontology (Italy); University of Tuebingen (Germany); Centre of Anthropology of Toulouse (France)

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Tuesday 5 september 2006,

Anfiteathre 4, Law Faculty, Lisbon University.

► *Each speaker has been allocated 15 minutes: 10 minutes for the lecture and 5 minutes for questions. If you speak for 15 minutes there will be no time for questions. Session Chairs will be very strict on time-keeping.*

	Time	Lecture	Event
	08.30		Welcome to participants
	08.45		Introducing the Colloquium 31 and the ALPINET Network
Paleolithic / Epipaleolithic	09.00	1	
	09.15	2	
	09.30	3	
	09.45	4	
	10.00	5	
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	10.30	7	
	10.45	8	
	11.00		Coffee Break
	11.15	9	
	11.30	10	
	11.45	11	
	12.00	12	
	12.15	13	
	12.30	14	
	12.45	15	
	13.00	16	
Lunch			
Mesolithic	15.00	17	
	15.15	18	
	15.30	19	
	15.45	20	
	16.00	21	
Neolithic / Metal Age	16.15	22	
	16.30	23	
	16.45	24	
	17.00		Coffee Break
	17.15	25	
	17.30	26	
	17.45	27	
	18.00	28	
	18.15	29	
	18.30	30	
	18.45	31	
	19.00	32	
	19.15	33	
End of C31			

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Palaeolithic/Epipaleolithic

1	Mourre V., Costamagno S., Bruxelles L., Chalard P., Colonge D., Cravinho S., Maureille B., Niclot M., Servelle C., Thiébaut C., Viguier J.	vincent.mourre@wanadoo.fr	Exploitation du mileu montagnard dans le Moustèrien final: la Grotte du Noisetier à Fréchet-Aure (Pyrénéèes françaises)
2	Pacher M.	martina.pacher@univie.ac.at	Upper Pleistocene environment and human occupation of the Eastern Alpine region
3	Collina C., Gallotti R., Piperno M., Santangelo N., Santo A.	rosaliagallotti@yahoo.it	La grotte des Vallicelli (Monte San Giacomo, Salerne, Italie). Un site moustérien aux pentes du Mont Cervati
4	Döppes D., Rosendahl W.	ddd@geo.tu-darmstadt.de	From Lake Chiemsee to the 'Totes Gebirge' – on the alpine path of the Neanderthals?
5	Mester Zs.	h8009mes@ella.hu	Adaptation to the mountain environment in the Palaeolithic in Hungary
6	Tillet T.	Thierry.Tillet@ujf-grenoble.fr	Caches et entrepos au Paléolithique: une nécessité dans l'exploitation cynégétique saisonnière des milieux montagnards
7	Walker N.	nathan@bookshop.jcu.edu.au	Locating micro-refugia in periglacial environments during the LGM
8	Mangado X., Mercadal O., Fullola J.M., Esteve X., Langlais M., Nadal J., Estrada A., Bergada M.M.	fullola@ub.edu	Le chemin de Montlleó, une route d'haute montagne dans le Magdalénien des Pyrénées catalanes
9	Pion G.	gilbertpion@wanadoo.fr	Processus évolutifs essentiels dans le paléoenvironnement et les industries de la fin du Tardiglaciaire dans les Alpes du Nord françaises et le Jura méridional
10	Mevel L., Bintz P., Bressy C., Monin G., Pion G.	ludomevel@yahoo.fr	Quel(s) modèle(s) pour le peuplement et l'azilianisation des Alpes du nord : Quelques éléments de réponses à partir des stratégies d'acquisition en matières premières lithiques et leur exploitation pendant le tardiglaciaire.
11	Marztluff M., Vaquer J.	martzluf@univ-perp.fr	Les Pyrénées pendant l'Épipaléolithique-Mésolithique, frontière naturelle ou espace d'échanges culturels ?
12	Montet-White A.	amontet@ku.edu	Use of mountain natural ressources in the late Paleolithic: a brief review of the site function of mountain localities in the Late Paleolithic and discussion of their role in the settlement systems.
13	Bang-Andersen S.	sveinung1ba@ark.museum.no	Prehistoric reindeer-hunting in the southern Norwegian highlands
14	Fontana F., Bertola S., Bonci F., Cilli C., Liagre J., Longo L., Pizziolo G., Thun Hohenstein U., Guerreschi A.	grr@unife.it	Organisation of living-floors in the site of Riparo Tagliente (Verona, Italy) during the Late Epigravettian. An integrated analysis of technological and palaeoeconomic attributes and spatial data with G.I.S. systems.
15	Farajova M.	malahat@mail.ru	Changes of Geographical Environment in Prehistoric Azerbaijan. (Upper Pleistocene and Holocene)
16	Dalmeri G., Cusinato A., Frisia S., Hrozny Kompatscher M., Kompatscher K., Bassetti M., Belli R.	dalmeri@mtsn.tn.it	The tradition of the Palaeolithic naturalistic art at the Dalmeri Rockshelter (Trento, N-E Italy) and climate variability

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Mesolithic

17	Crotti P., Bullinger J.	pierre.crotti@unil.ch	Approvisionnement en matières premières siliceuses et mobilité dans les Alpes de Suisse occidentale durant le Mésolithique
18	Bressy C.	celine.bressy@ujf-grenoble.fr	Mesolithic territories in French Alps : insight from siliceous raw material circulation
19	Grimaldi S.	stefano.grimaldi@lett.unitn.it	Settlement strategies in the early Mesolithic northeastern Italy
20	Bournery A., Ruas M.-P., Vaquer J., Vigne J.-D.	bournery@hotmail.co.uk	Plant-animal subsistence in mountain environments: the example from a Western Mesolithic site of Languedoc, the Abeurador.
21	Leitner W.	walter.leitner@uibk.ac.at	The oldest silex and rock-crystal mining traces in high alpine region

Neolithic / Metal Age

22	Forenbaher S.	staso.forenbaher@zg.htnet.hr	Shepherds of a coastal range: archaeological potential of the Velebit Mountain (Eastern Adriatic)
23	Perrin T.	tperrin@free.fr	The neolithisation of the Rhone valley and its margins
24	Rezi-Kato G.	rkg@hnm.hu	Data on the role of caves in cultural history at the karstic region of the NE Hungary
25	Pedrotti A.	annaluisa.pedrotti@lett.unitn.it	Settlement strategies in Northeastern Alps from Neolithic to Copper Age: some examples
26	Féblot-Augustins J.	jehanne.feblot@mae.u-paris10.fr	Du Néolithique ancien au Néolithique moyen I à la grotte du Gardon (Ain) : l'apport des études de provenance des matériaux lithiques
27	Valde-Nowak P.	valde@argo.hist.uj.edu.pl	Neolithic penetration of the Mid-Mountains. Case study from the Polish Carpathians.
28	Cazzella A., Recchia G.	a.cazzella@virgilio.it	A view from the Apennines: the role of the inland sites in central and southern Italy during the Bronza Age
29	Baioni M., Poggiani Keller R.	baicop1@virgilio.it	Settlement strategies in alpine valleys of Lombardy (Northern Italy) from Neolithic to Early Bronze Age: some examples.
30	Banchieri D.	daria.banchieri@comune.varese.it	Data on settlement views during Neolithic in Prealpin lakes of NW Lombardy (Northen Italy)
31	Belvedere O., Forgia V.	belvedere.oscar@lettere.unipa.it	Mountain environment and landscape in prehistoric Sicily
32	Lippert A.	andreas.lippert@univie.ac.at	Settlement and early copper mining in the area of Bischofshofen (Salzburg, Austria)
33	Beldiman C., Sztancs D.M.	belcor@gmail.com	Occupation du milieu montagnard et comportement symbolique dans la Préhistoire de la Roumanie: l'exemple des sites en grotte des Carpates méridionaux, dép. de Hunedoara

Colloquium 31

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ABSTRACTS / RESUMES

(in alphabetical order according to first author's name)

BAIONI Marco, POGGIANI KELLER Raffaella

Settlement strategies in alpine valleys of Lombardy (Northern Italy) from Neolithic to Early Bronze Age: some examples.

This paper is intended as a partial summary, with only the data concerning the period between Late Neolithic and Ancient Bronze ages, of a larger work on the individuation of settlement dynamics and exploitation strategies in the alpine and pre-alpine territory of middle-eastern Lombardy, considering the variations during pre-historic and proto-historic ages. The researches concerned the provinces of Sondrio, Bergamo and Brescia, Whereas the works on the territory of Sondrio have been published some time ago, those of the valleys near Brescia (Valle Camonica, Valtrompia and Valle Sabbia) began in 1998 and are finished for the survey phase but still partially not published except for short notes in the Notiziario della Soprintendenza Archeologica or as papers on specific chronological periods already presented in congresses. The work has included an initial systematic survey and mapping of all the finds, not only through a bibliographical and archivistic examination but also by direct observation of artefacts. Near the well known sites many recent excavations by the Soprintendenza, both on monophasic settlements like Iseo - ex Resinex, Casale di Albino or Nave - Via Molino, and on sites which have provided wide stratigraphies like Monte Covolo, Lovere ' Colle Lazzaretto, Ubiale Clanezzo - Castello and Trescore Balneario, have been considered. From a geographic point of view the examined territory has a very diversified morphology including wide lakes (Garda lake and lakes of Idro, Iseo, Como) and important valleys (Valtellina, orobiche valleys, Valcamonica and Valle Sabbia) really important factors for transalpine communications and very interesting for mineral resources. The crossing roads on N-S, along the main valleys, were easier to go through than the roads E-W which were mainly along the hills at the edge of the plain. Particular attention has been paid to the territorial resources which have sometimes influenced settlement choices and the long duration of some of the settlements. Besides, the presence of raw materials and their qualitative peculiarities (flint, copper) have had a bearing on the technological environment and influenced both the size of artefacts and the manufacturing techniques. Sometimes the topographical choices follow recurring patterns, due probably both to the social-economic situation and the environmental context, particularly influencing also the inner structure of sites. In the general analysis the different typologies of the contexts have been separated. In fact, as well as the settlements, sancturies and burial area, often connected with each other both from a spatial and a chronological point of view, have been considered. New carbon datings allow to define a shorter chronological frame with wider possibilities of connection between different contexts. The resulting frame, completed with the results of paleo-environmental reconstructions, seems much more complex and articulated, with regard to the linear developments, than was supposed until now.

BANCHIERI Daria

Data on settlement views during Neolithic in Prealpin lakes of NW Lombardy (Northen Italy)

During Neolithic geomorphology and environment of Prealpin lakes in NW Lombardy is very varied. Human groups of this area are among the very first in northen Italy to document agriculture (5040-4900 BC cal). Even if recent data analisys is still in progress, the results of excavations at Isolino Virginia allow to consider the connection between settlement strategy / lake and man / enviroment that caused, during Neolithic, the choise of dwelling areas and the type of structural technology. At present Isolino Virginia is only neolithic site of Northern Italy with so monumental wooden structures which are in a good state of preservation.

BANG-ANDERSEN Sveinung

Prehistoric reindeer-hunting in the southern Norwegian highlands: current results from a distant north

In clear contrast to central and southern European alpine areas and the north European lowland plains, where *Rangifer tarandus* became extint during the final Late Glacial, the species until present-day has survived in a wild state in central parts of the Scandinavian mountain chain. As a concequence, reindeer hunting strategies in the Mesolithic and during

later prehistoric periods in Europe can only be studied archaeologically, interpreted and at least partly understood retrospectively in the highlands of the present Norway and minor parts of Sweden. In the course of time the climate and vegetation in the mountains changed from harsh periglacial settings to high-atlantic hypsithermal conditions with parts of the mountain plateaux above 1000 m a.s.l. wood covered, and finally to the low- or middle alpine treeless landscapes known today. The first use of the inland took place as short-term reindeer hunting expeditions more or less immediately after the pioneer settlement of coastal areas at the Late Glacial / Early Holocene transition. The lecture summarizes and evaluates the results of ongoing research on coast –mountain mobility patterns and montane reindeer hunting methods performed in SW Norway between 9800 and 1800 (uncal.) y.BP – from stealth hunting with flint-tipped arrows to implementation of stone-lined, deliberately designed reindeer pitfall traps.

BELDIMAN Corneliu, SZTANCS Diana-Maria

Occupation du milieu montagnard et comportement symbolique dans la Préhistoire de la Roumanie: l'exemple des sites en grotte des Carpates méridionaux, dép. de Hunedoara

L'ouvrage propose une analyse menée sur un lot d'objets de parure travaillés en matières diverses – céramique, marbre, matières dure animale (coquillage, bois de cerf, défense de sanglier, dents de canidés). Ils ont été découvertes dans trois sites en grotte situés dans le dép. de Hunedoara, la partie Centre-Sud-ouest du pays: Cerisor – „Grotte Cauce" (CRC); Cerisor-„La Grande Grotte" (CRM) (Montagnes Poiana Rusca, secteur Est); Ohaba-Ponor - „Grotte de Bordu Mare" (OPN) (Montagnes Orastiei, secteur Sud-Ouest). La plupart des pièces (provenant des sites CRC et CRM) ont été découvertes dans des contextes stratigraphiques bien précisés pendant les fouilles menées en 1997-1999 par Sabin Adrian Luca et Cristian Roman, qui ont mis à notre disposition les matériaux pour étude. Deux objets proviennent des fouilles des années '50 dans le site OPN. Les pièces de CRC et CRM sont conservées dans les collections du Musée «Château des Corvins» du municipe Hunedoara. L'ouvrage fait partie de la récente série d'articles et d'études qui ont pour but la publication systématique des lots de l'industrie préhistorique des matières dures animales et de la parure de Roumanie. L'effectif étudié compte 22 pièces appartenant à cinq cultures: aurignacien – Paléolithique supérieur; Starčevo-Cris – Néolithique ancien; Turdas – Néolitique récent; Cotofeni – Enéolithique final; Wietenberg – l'Âge du bronze moyen et récent. Les types présentes sont: les perles en céramique et sur coquilles divers (8); les disques en céramique (6); les pendeloques en marbre, sur défense de sanglier et en bois de cerf (3); les dents percées (3); les bracelets en céramique et en spondyle (2). Le Répertoire rassemble toutes les dates concernant les objets: état de conservation, morphométrie, description intégrale-morphologie, l'étude technique (les étapes du débitage, du façonnage, les traces d'utilisation – décelées à l'œil nu et à binoculaire). L'étape technique du débitage atteste l'application des solutions techniques simples, comme la fracturation par percussion directe. Dans l'étape du façonnage et de finition on a appliqué des procédées plus diversifiés que pour le débitage: l'abrasion multidirectionnelle domine, tandis que la perforation (préparation par rainurage axial et rotation alternative de deux cotés; rotation continue à l'aide du foret à main – sur les dents; par entaillage et excavation de la spongiosa sur le bois de cerf) permet d'aménager le dispositif d'attache. Les traces d'utilisation décelées sont localisées souvent au niveau des bords des perforations, qui ont l'aspect lustré et émoussé; on constate aussi des fractures subies probablement durant l'utilisation ou intentionnelles (mutilation pendant un rituel d'abandon?). L'étude a permis d'appliquer en première un protocole d'analyse intégrale sur objets de parure de Roumanie datent du Néolithique récent, de l'Enéolithique final et de l'Âge du bronze récent. Cette approche en biais diachronique pendant plusieurs âges de la Préhistoire a permis aussi de mettre en lumière des types rarement attestés jusqu'à maintenant dans les découvertes préhistoriques du pays, comme la canine de loup percée de OPN, datée de l'Aurignacien, qui est le plus ancien objet de parure connu en Roumanie. Parmi les pièces rares on compte un fragment de bracelet sur coquille de Spondylus sp., appartenant à la culture Starčevo-Criş (CRC). La grande perle tubulaire travaillée sur spondyle est aussi un objet rare au niveau du Néolithique ancien du pays et probablement elle représente la plus belle pièce de ce type connue jusqu'à maintenant sur le territoire de la Roumanie (OPN). L'artefact est très bien conservé et permet la lecture intégrale des détails morphologiques et des stigmates de fabrication et d'utilisation. L'analyse des indices de la fabrication (façonnage) montre que cette opération a été réalisée par abrasion multidirectionnelle intense, suivi par un finissage très soigné. La perforation a été pratiquée probablement par foret à main ou à l'archet. Les indices de l'utilisation intense comme élément d'enfilage libre – unique ou dans un collier (probablement pendant plusieurs générations comme «héritage de famille») sont l'émoussement et le lustre brillant spécifique des extrémités et des surfaces (sur lesquelles on peut observer aussi des microstries superficielles disposées d'une manière aléatoire). La perle provient très probablement de la région Sud du Danube, étant travaillée

dans un atelier spécialisé (voir l'exemple des découvertes de Kovačevo, Bulgarie). L'ouvrage offre l'occasion de mentionner aussi autres découvertes de cette sorte en Roumanie (plusieurs perles en provenance du site de Dubova – „Cuina Turcului", niveau I de la culture Starčevo-Cris) et dans les régions avoisinantes (Bulgarie, Serbie et Muntenegro). Quant aux conditions spécifiques de la présence d'une pièce pareille dans la grotte on peut envisager l'hypothèse de la déposition votive ou suite à un rituel d'abandon du site. Les perles sur coquillage fosil (Dentalium sp. et Conus fuscocingulatus) de CRC et CRM documentent l'identification et l'utilisation des ressources fossilifères de la région par les préhistoriques. Les deux perles tubulaires entières de CRM, appartenant à la culture Wietenberg de l'Âge du bronze récent, sont aménagées sur coquilles de Dentalium sp. recueillis très probablement dans un gisement fossilifère localisé dans la région (sur le territoire actuel du municipe Hunedoara? ou celui du village Dobra?). Les artefacts sont très bien conservés et permettent la lecture intégrale des détails morphologiques et des stigmates de fabrication et d'utilisation. L'ouvrage analyse tous les indices de la fabrication, réalisé uniquement par fracturation et par sciage des extrémités anatomiques; les stigmates de cette opération sont clairement observables sur la partie proximale (larges retouches d'impact ou de fracturation par flexion) et sur la partie distale (traces de sciage). Les indices d'utilisation intense comme éléments d'enfilage libre (collier) sont l'émoussement et le lustre spécifique des extrémités. Les coquilles sont couramment combinées avec d'autres pièces d'enfilage, comme les perles en céramique; une de ce type, de très petites dimensions, a la forme d'étoile avec quatre branches; elle a été retrouvée même à l'intérieur d'une des pièces analysées. La présence des autres deux perles tubulaire sur coquilles de Dentalium, cette fois dans l'inventaire d'une tombe d'inhumation attribuée à la culture Wietenberg du site CRC favorise l'hypothèse de l'utilisation courante par les communautés préhistoriques de la région des matières premières en provenance des gisements fossilifères. L'ouvrage propose aussi la reconstitution (en plusieurs variantes) du mode d'attache des artefacts étudiés sur lien.

BELVEDERE Oscar, FORGIA Vincenza

Mountain environment and landscape in prehistoric Sicily

The aim of the present paper is to illustrate a methodological approach, designed for the study of a mountainous region, inhabited since the Upper Palaeolithic, and to show the preliminary archaeological data. The approach is the topographic one and it employs a GIS, to process information obtained by survey. Archaeological interest of Madonie mountains (Palermo, Sicily) is due to the discovery of different prehistoric sites into caves. Some example comes from caves sited at ca. 1000 m upper the level of the sea (Vecchiuzzo – Petralia, Chiusilla and Fico – Isnello), occupied during late Neolithic and Copper age and from rock-shelters, sited at a higher altitude (1500 – 1800 m) with problematic flint finds. There are many publications about this issue, but unluckily they have produced a misunderstanding of the local prehistoric reality, giving importance to cave sites while ignoring open-air sites, not easy to find, but actually existents. We are surveying different geomorphologic systems at different altitudes, by a probabilistic stratified sample, in order to reconstruct a landscape use chronologic pattern. Many topics are going to be processed by GIS, to understand mobility strategies of human groups in different periods of prehistory (since Upper Palaeolithic to Bronze Age), to find raw materials sources and diffusion patterns, to observe changes in the use of natural resources and related environment by people of different economic and cultural traditions (as Upper Palaeolithic hunter-gatherers and Neolithic farmers-shepherds). Our analysis is also accompanied by a lake sediments palinologic investigation, carried out by University of Amsterdam (Netherlands) and Florence (Italy), which is giving important information about climatic changes and paleoenvironment. This study, at the moment, represents the first topographic and landscape archaeology approach to the knowledge of a mountain environment in prehistoric Sicily. We would like to discuss first paleoenvironment and archaeological data about an unexplored region of Sicily, also debating methodological themes, in order to compare our approach with others.

BOURNERY Alexandre, RUAS Marie-Pierre, VAQUER Jean, VIGNE Jean-Denis

**Plant-animal subsistence in mountain environments:
the example from a Western Mesolithic site of Languedoc, the Abeurador**

Hunter-gatherers societies of Western Europe have experienced a series of environmental changes which has generated important transformations of their ecosystems. This communication represents a contribution to the study of human exploitation in its surrounding mountain environment and the matter of botanical remains often associated within the archaeological records. The Abeurador cave (Hérault, France) is a reference locality for the western Mesolithic of Languedoc were large quantities of botanical material have been found. The results presented in this paper try to summarize some of the result of a recent doctoral thesis (Al. Bournery) and an innovative approach to discuss the implicit assumption that the botanical remains are primarily the result of an anthropogenic activity. The archaeozoological analysis of the Abeurador will specially focus on the birds, mainly corvids (Pyrrhocorax sp.) through the transition Epipaleolithic to Mesolithic. Where those birds have special requirements on their nesting sites (deep caves, crevices or other inaccessible rock faces), their presence in our stratified deposits leads us to analyse in which extent the plant remains can be directly linked to the past human activity or not (birds may introduce plant material for food). Few sites around the circum-Mediterranean regions have yielded such botanical material concentration dated to the periods before agriculture had become established. Such issues, concerning the gathering economy preceding agriculture are a crucial factor in the question of an early domestication (proto domestication) at the Abeurador settlement. Comparisons of the faunal assemblages of the Abeurador cave and the seeds introduced by birds in a natural nesting site will provide a new methodological frame of reference to identify the mode of deposition as either anthropogenic or natural. The conclusions will highlight the value of plant remains as an indicator of paleoclimate and how they support Epipalaeolithic and Mesolithic strategies, in both terms of settlement and mobility.

BRESSY Céline

Mesolithic territories in French Alps : insight from siliceous raw material circulation

In Northern French Alps, Mesolithic occupations are documented by numerous sites located up to 2000 m high. Archaeological evidences support the hypothesis of seasonal exploitation of varied resources, which implies movements between plains and mountains environments. Thus, the question of human circulation systems has been adressed on the basis of siliceous raw material provenance. Widely available in limestone massifs of French Alps, flint constituted the main lithic raw material exploited on a regional scale at that time. As long as suitable characterization methods are applied to identify its raw material sources, flint acts as a useful space fingerprint. Thus, while Mesolithic sites distribution and their status provide a global outline of territories organization, the investigations on flint procurement patterns reveal territories management and extent, intersite relationships and main circulation axes between mountain environments and plain. A specific behaviour towards raw material, different from previous and following periods, has been shown, highlighting a relative independence from raw material outcrops. Beside economic aspects, flints that circulated over great distances also address the issue of cultural identities, supporting the results of typo-technological approaches.

CAZZELLA Alberto, RECCHIA Giulia

A view from the Apennines: the role of the inland sites in central and southern Italy during the Bronze Age

Forty years ago S.M. Puglisi highlighted the importance of the Apennines mountain range (the backbone of peninsular Italy) on the economy, but also as regards the social and ideological aspects, of the Bronze Age communities in central and southern Italy. That proposal both achieved success and exposed him to criticism in the contemporary scientific community, but from then a few field researches were carried out in inland sites, so the role of the mountain areas in central and southern Italy is still indeterminate. Even if the data processing is still in progress, the results from the excavations in two Bronze Age inland sites (Monteroduni, in the Volturno Valley, and Oratino, in the Biferno Valley: Molise region) lead us to take again into consideration the problem of the Apenninic areas, of their specific feature,

economic potential, interaction relationship with the coastal settlements. The Bronze Age is a period rich in technological innovations (as regards both the subsistence and the treatment of raw materials) and social transformations: the authors deal with the problem how the mountain areas in central and southern Italy, today considered very marginal, took part in that great transformation process.

COLLINA C., GALLOTTI R., PIPERNO Marcello, SANTANGELO Nicoletta, SANTO A.

La Grotte des Vallicelli (Monte San Giacomo, Salerno, Italie). Un site moustérien aux pentes du mont Cervati

La grotte des Vallicelli (Monte San Giacomo, SA) s'ouvre sur les pentes du Mont Cervati à 1200 m d'altitude; son intérêt préhistorique a été reconnu au cours du 1999, dans le cadre des prospections effectuées par l'Université de Naples "Federico II", et confirmé les années suivantes par des fouilles conduites sous la direction de l'un des auteurs (M.P.). Malgré son altitude, la cavité montre une longue fréquentation, à partir du Moustérien, qui se prolonge jusqu'à l'âge du Bronze et qui est bien documentée, soit à l'intérieur que à l'extérieur de la grotte, par des matériaux du Mésolithique, du Néolithique moyen, et du Chalcolithique. Dans le versant oriental du Parc du Cilento et du Vallo di Diano, le complexe moustérien de technique Levallois à la base du remplissage représente la première témoignage, en contexte stratigraphique, d'industries du Paléolithique moyen associées avec faune à Capreolus capreolus et Cervus elaphus dominants. L'assemblage lithique, en considération surtout de l'altitude du site, pourrait être attribué à une phase relativement tempérée du Würm ancien, peut-être correspondante à l'occupation moustérienne des niveaux les plus anciennes de la Grotte de Castelcivita, qui ont une datation C14 de 40.000 ans, à l'intérieur du stade isotopique 3. Pour sa localisation, la grotte des Vallicelli recouvre un rôle important pour la compréhension des dynamiques de réponses adaptatives, mobilité et échange entre sites côtières et d'altitude au cours du Pléistocène final et du début de l'Holocène.

CROTTI Pierre, BULLINGER Jérôme

Utilisation des espaces montagnards durant l'Epipaléolithiques et Mésolithiques dans les Préalpes de Suisse occidentale

Le bilan des données anciennes et des recherches entreprises ces dernières années montre que l'occupation des Préalpes de Suisse occidentale par des populations de chasseurs-cueilleurs remonte avec certitude à l'Epipaléolithique récent, dès le début du Préboréal, et probablement même à l'Azilien, au cours de l'Alleröd. Les sites en abri sous roche de l'étage montagnard, entre 900 et 1200 m, à l'exemple de Château-d'Oex, jouaient certainement le rôle de sites résidentiels saisonniers, dès l'Epipaléolithique récent déjà. On constate une exploitation diversifiée des ressources animales qui ne se distingue pas de manière significative de ce que l'on observe dans les établissements de plaine. Aucun témoignage d'une chasse spécifique au milieu montagnard n'est décelable. La composition de l'outillage suggère des activités variées, qui ne paraissent pas liées exclusivement à la chasse. Un constat que confirment les premiers résultats de la tracéologie. Les prospections de surface initiées en 2000-2001, au Pays-d'Enhaut, en Gruyère et dans la région du Jaunpass, ont révélé de nombreux gisements de plein air, échelonnés entre 1400 et 1700 m. d'altitude. Ces découvertes montrent que les chasseurs investissaient également les territoires de l'étage subalpin inférieur et s'installaient de préférence sur de petites hauteurs, en bordure de marais ou d'anciens lacs, généralement à proximité de cols. La fonction de ces campements saisonniers d'altitude reste encore à définir : haltes de chasses ou sites résidentiels eux aussi ? Les premiers indices sur l'approvisionnement en matières premières siliceuses laissent entrevoir une forte mobilité territoriale des groupes de chasseurs-cueilleurs, des déplacements entre établissements de plaine installés sur le Plateau suisse et campements d'altitude implantés sur le versant nord du massif alpin. Cette mobilité est bien attestée pour les Préalpes occidentales mais, en l'absence de données sur d'autres secteurs montagneux jouxtant le centre et l'est du Plateau suisse, on ignore si ces déplacements touchent l'ensemble du massif ou, au contraire, sont ciblés sur certaines zones, présentant un intérêt économique plus marqué, comme par exemple un accès facilité aux sources de matières premières siliceuses.

DALMERI Giampaolo, CUSINATO Anna, FRISIA Silvia, HROZNY KOMPATSCHER Maria, KOMPATSCHER Klaus, BASSETTI Michele, BELLI Romina

The tradition of the Palaeolithic naturalistic art at the Dalmeri Rockshelter (Trento, N-E Italy) and climate variability

The Dalmeri Rockshelter, located at 1240 m above sea level on the northern slope of the Marcesina karst plateau (Trento Province, NE Italy, 45º 59' 37" N, 11º 36' 8" E), yielded a unique finding of over 200 red-ochre painted stones, dated at c. 13 cal kyr BP and pertaining to Palaeolithic naturalistic tradition. This site shows two settlement phases, the earliest of which is strictly tied to the presence of the painted stones and their arrangement: the stones had the painted surface facing downwards. This early settlement phase is dated by 3 AMS radiocarbon ages on charcoals, which yielded 13,410-13,210, 13,300-13,120 and 13,300-12,940 cal BP (2σ). The red ochre silhouettes were painted on oolitic grainstone from the Jurassic host rock. Restoration revealed different representations, naturalistic paintings as well as signs. The naturalistic silhouettes of the zoomorphic figures are characterized by the use of natural features of the original stones to increase the plastic effect of the image and give the impression of lively movements. X-ray Fluorescence and X-ray diffraction analyses on two samples identified two red pigments: hematite (Fe_2O_3) and goethite (FeO(OH)). The Fourier Transform Infra Red analyses revealed the presence of bee's wax on 4 stones, which might have act as colour binder. Dating ascribes both phases of settlement at Riparo Dalmeri to the Bølling-Allerød (GI-1 Greenland Interstadial 1) which, according to hypogean climate proxy archives from northern Italy (stalagmites) was relatively warm and humid. However, several drier and colder spells punctuated this 1000 year long interstadial. The GI-1 was followed by a severe and rapid (c. 30 years) climate deterioration, known as the Younger Dryas (YD; Greenland stadial 1), which also lasted about 1000 years. Although the YD was itself punctuated by a warmer phase, its cold and dry conditions were such as to cause the abandonment of the north-facing Riparo Dalmeri. The observed climate instability and the environment changes in the last part of the Pleistocene, most probably influenced the Epigravettian culture and the spirit world of these hunting communities. After the YD, the warmer Holocene and its relative climate stability, could have had a role in the development of a shared knowledge rooted in the Upper Paleolithic, but characterized by new technologies and strategies of natural resource exploitation. In this North-Eastern sector of the Italian Alps a change of the artistic expression also took place: the naturalistic style typical to the Late Glacial tradition was abandoned for more "abstract" forms.

DÖPPES Doris, ROSENDAHL Wilfried

From Lake Chiemsee to the 'Totes Gebirge' – on the alpine path of the Neanderthals?

The site of Siegsdorf (Chiemgau, Bavaria, Germany) yielded very well preserved bone remains, especially a nearly complete skeletton of a mammoth and an incomplete skeleton of cave lion (Ziegler, 1994; Rosendahl et al., 2005). In 1992 cut marks were identified on some bones of the lion (Gross, 1992). The bones were now dated by AMS 14C at 47,180 +1,190/-1,040 years BP (Rosendahl & Darga, 2002). This is the first evidence of the presence of Neanderthals at the foot of the Bavarian Alps and the oldest one dated in the German Prealps. The position of the cut marks on several bones of the cave lion of Siegsdorf show that the carcase was disemboweled (Rosendahl & Darga, 2004). The nearest localities with Middle Palaeolithic finds are from the 'Totes Gebirge', Austria, approx. 100 km away from Siegsdorf. The high alpine Salzofenhöhle is located in the Styrian part of the 'Totes Gebirge' at an altitude of 2006 m. The fauna of the cave consists mainly of cave bear and ten other large mammals (Ehrenberg 1941; Döppes, 2001). The presence of palaeolithic human beings in the Salzofenhöhle is proved by nine Mousterian lithic artefacts (Mottl, 1950; Pittioni 1984; Pacher, 1997). Six numeric dating results from five different sites in this high alpine cave fall into groups – one group is centred around 32,800 years BP and the other group falls out of the range of the 14C-method, i.e. they are older than 44.500 years BP (Ehrenberg 1969, Pittioni 1980, Döppes 2000). The artefacts are related to the second group. The high alpine site Ramesch-Knochenhöhle is located in the Upper Austrian part of the 'Totes Gebirge' at an altitude of 1960 m. The fauna consists also mainly of cave bear and four other large mammals (Draxler et al., 1986; Rabeder, 1999). The five artefacts found there are described as Mousterian stone tools (Pittioni, 1986). The paleolithic stone artefacts originate from short stays of Neanderthals during a warmer climatic phase, dated from 56,000 to 44,000 years BP, OIS 3 (Draxler et al., 1986). The dominant raw material of both high alpine sites is a kind of flint (Hornstone). This material originates neither from the Alps nor from the Alpine foreland. The nearest known source for such a raw material is the

gravel of the Danube. Therefore it seems realistic that the Neanderthals came from the East and took the way through the Danube valley to the West. The localities Siegsdorf and the 'Totes Gebirge' point out that during the OIS 3 the Neanderthals used also alpine regions as interesting hunting areas.

FARAJOVA Malahat

Changes of Geographical Environment in Prehistoric Azerbaijan (Upper Pleistocene and Holocene)

At the Quaternary period radical change of the earth's relief, which was the consequence of active tectonic [Sh.Aliyev, B.Budagov, 1973] and volcanic activity [A.Zaroostrovtsev,1966;K.Gul,1956] took place on the territory of Azerbaijan. The process of orogenesis was taking place in Upper Pleistocene period. In connection with various geological phenomena, fluctuations of the level of the world ocean were taking place, which, in their turn, changed the contours of land and seas. At that period, present mountains Beyukdash, Kichikdash, and Shongar, were washed up by the desalinated Khvalin Sea [Sh.Aliyev, B.Budagov, 1973] with didacnas [N.Rzayev, 1976]. The last great transgression in the area of the Caspian basin took place in Upper Pleistocene, and as a result of it, the Khvalin Sea was formed, which reached far in the north the Ural and Kazan. The interesting thing is, that its precipitations in the area of the Black sea corresponded with ancient layers of the Black sea.[N.Vereshagin,1959]. Waters of the Mediterranian Sea through the Black Sea, i.e through Manich gulf reached the Caspian Sea. Manich gulf was opened in Vurme in the Khvalin layer. [G.Popov, 1955; N.Vereshagin, 1959;K.Gul, 1956]. Specialists usually connect the Khvalin Sea with the last stage of great glaciating of the Caucasus mountain range. [K.Gul, 1956] Traces of the most ancient settlement of a man in Gobustan are sites, which were revealed in the area once having been under the sea. Fluctuations of the level of the Caspian Sea help us to establish chronology of ancient monuments, whish are in a certain correlation with the layers of transgressions. Examples of similar chronologization we constantly find in Gobustan on Beyukdash and Kichikdash Mountains. Ancient rock pictures, which were buried under the thick layer of ground, were revealed on one of the walls of "Ana-zaga" cave. They refer to the period, when the level of the sea was comparatively lower. These rock pictures were situated in 10-12 km from the shore, on the height of 127m above the level of the sea (World Ocean). Terraces and traces of the shoreline, which were formed at that time, can still be seen sometimes in several kilometers from the modern shore into the depth of the territory. We must also note, that the mixed layer of pebbles and seashells was revealed on "Gaya-arasi" site on Kichikdash mountain. [Dj.Rustamov, 1984] Further small sea transgressions were taking place in Holocene, not beyond the modern boundaries. The last transgression of the Caspian Sea is dated approximately by I thousand years b.c. [S.Kovalevskiy, 1933]. On the place of present stretching semi desert, scorched with sun, the draught-resistant sparse trees such as pistachio, hawthorn, wild pear, juniper and pomegranates were growing at the period of first settlement of Gobustan. [N.Vereshagin, 1981]. Natural conditions in the Upper Pleistocene period were close in the damper climate to the woods of gallery type. Analysis of samples of fossilized pollen, which was taken from the remains of the fire in "Ana-zaga" on Beyukdash Mountain, showed, that oak and pine trees were growing on this territory [Dj.Rustamov, 1994]. All these lets us suppose about the existence of places with pine-oak woods in the nearest vicinities of Gobustan and the coastal area of the Caspian Sea. Even today pine trees are growing near Gara-atli cemetery on Kichikdash Mountain. Remains of treelike juniper (Juniperus polycarpos) were found from binagadi bituminous layers of the Upper Pleistocene age, which indicates to the wide extension of juniper woods at that period. Wild pear (Pirus salisifolia), shrub cherry (Prunus microcarpa), pomegranate shrubs (Punica granatum), honeysuckle (Lonicera), elm, grapes vine, which were found out in Binagadi layers have been until recently growing in Gobustan. Some of these types of flora can still be met in Gobustan. In Upper Pleistocene period, on the basis of findings of tree plants in Apsheron, the landscape of savanna was developed. A thick piece of wild grapes vine (Vitis conf.silvestris), which was found in Binagadi, presupposes the existence of gallery woods [V.Petrov, 1939]. The fact of the increase of dampness at that period can be confirmed by the existence in the mountains of springs of a rather big freshwater stream, flowing into the sea. This supposition corresponds with the fact that in the Upper Quaternary period, the borders of transgression of the desalinated Khvalin (today Caspian) sea reached Mingechevir reservoir. Precipitations of this sea with half-freshwater fauna of mollusks were revealed even under the Ural and Kazan. [N.Vereshagin, 1959]. On the slopes of Gobustan foothills grass vegetation of cereals type, which at present can be found in some places with higher dampness in Gobustan, predominated at that time [I.Gromov, 1952]. Meanwhile, numerous rock pictures of deer indicate to the existence of well-developed gallery woods, probably later destroyed by people [N.Vereshagin, 1959]. On the basis of findings of remains of tree vegetation in Upper Pleistocene period in the mountainous part; at any case, the landscape of savanna was developed, but it was formed in other way in comparison with modern savannas of Africa. These north savannas represented lightwoods, which were formed by trees with winter fall of leaves. [V.Petrov, 1939]. Such was a

general picture of Upper Pleistocene landscape-geographical flora of Gobustan, which, in our opinion, better corresponds to those few facts, which have been known since Binagadi Pleistocene. General desert forming processes of open landscapes in connection with digressing of glacier influenced the process of landscape degradation of northern savanna, formation on its place half -steppe and half -desert plants and the increasing of salting processes. Now let us consider materials, concerning paleofauna. First of all, we should note, that the analysis of rock depictions of animals gives us certain information about the climate of the past. Wild fauna is clearly divided into two groups. To the first group refer the inhabitants of gallery and shrubbery woods (noble deer, a boar). Bones of the boar are well represented in all more or less considerable collections of Gobustan. This animal has been preserved in Azerbaijan till today. The inhabitants of open steppe or desert landscapes and mountainous areas represent the second group. These are an ox, a camel, steppe sheep, and gazelle. Fauna remains of these types are characteristic of not only sites of inner regions, but also monuments of ancient Caspian terraces. The revealed bones of animals from Gobustan settlements and burial mounds belong to the ox, sheep, goat, and bird [Dj.Rustamov, F.Muradova, 1969]. The most part of them is considered to be extinct animals today-an ox, kulan, besoar goat, steppe sheep, and camel (?). During archeological excavations, even the jaws of cheetah were found out in these places [N.Vereshagin, 1981]. Fossilized remains of now being extinct representatives of fauna are known to us from bituminous layers of the Upper Pleistocene period in Apsheron peninsula and in Shikhov. Today being considered already extinct oxen-aurochs Bos Primigenius Boj, gazelles Gazella Subgutturosa, kulans Equis hemionus Pall, goats Capra aegagrus Erxl, noble deer Gervus elaphus maral, boars S.apsheronicus Burtsch. Et Dzhaf, leopards and lions inhabited the area of the Big Caucasus. Considering wild flora of Upper Pleistocene of Azerbaijan- today the desert areas of Apheron peninsula and Gobustan, we should pay attention to the wild ox (Bos Primigenius Boj). The most interesting fact is the wide extension of the wild ox-aurochs in the Caspian regions. However, wide extension of aurochs in the late Paleolithic period, was the reason for the conclusion of the majority of researchers, that aurochs is the inhabitant of plain and forest-steppe territories. According to the osteological analysis (Дж.Рустамов, 2000 г.) on Gaya-arasi site on Kichikdash 98% of bones belong to gazelle, but in ”Ana-zaga” on Beyukdash- 40% belong to kulan, 40%-to gazelle out of 10 000 revealed bones. Bones of goats and oxen are single. What concerns Kulans Equus hemionus Pall, they have lived in the south of Caucasus since Low Paleolithic period until present times. Numerous depictions of kulans-wild horses on the rocks of Gobustan and revealed bone remains, witness about the wide extension of these types of animals. During archeological excavations In Gobustan in 1986 in “Ana-zaga” cave on Beyukdash mountain bones of kulan were revealed from the cultural layer. Researchers consider kulan the direct descendant of Pleistocene donkey and confirm the extension of Holocene half-donkey-kulan by reliable facts. Historical information of the ancient authors, and also Nizami Gandjevi’s glorifications of hunting on wild donkeys-onagres in the Kura-Arax lowland (XIIc) [N.Gandjevi ”Iskender - name” transl. K.Lipskerov, 1989]. Rashid-Ad-Din’s story (XIV c) about grand driving-in hunting on wild onagres, arranged by Gazan khan in Talish. [Rashid-Ad-Din. Collection of annals. Transl.A.Arends, 1946], witness about habitation of the territory by these animals until recent times. One of the favourite plots of ancient artists was depiction of deer. The deer plot can be traced in the rock pictures of Gobustan, Apsheron, Gemigaya, Kelbadjar, on the crockery and decorations of the Bronze epoch, on Khodjali bronze belt buckles, on ceramics of the Late Bronze epoch of Kiligdag and Khanlar burials. [M.Guseynova,1989]. Noble deer Cervus elaphus binagadensis subsb.nova has been known to us from the remains of Upper Quaternary Binagadi bituminous findings from Apheron peninsular (not far from Lokbatan and Binagadi). In Apsheron peninsula, on Artem island (now Pir-Allakhi) from Quaternary deposits, bones and sculls of the deer Cervus elaphus maral Ogilby Cervus elaphus maral Ogilby, which is closer to the modern Caucasus type of deer were found out. [N.Alekperova, 1952]. Remains of these groups of deer on the Caucasus can be traced since low Pleistocene until modern times [N.Vereshagin, 1959]. Due to the rock depiction of a spotted deer on stone №24 on upper terrace of Beyukdash Mountain in Gobustan we can judge about existence of the type of spotted deer Cervus (Sica) Nippon Temminick, the remains of which were revealed in the Upper Pleistocene deposits of Apsheron peninsula. [D.Rustamov, F.Muradova, 1984]. Great number of bones of the deer was found out during archeological excavations from the cultural layers of the early and middle Bronze epochs on the territory of Nakhichevan. [V.Aliyev, 1991]. Further more detailed study of flora and fauna of Upper Pleistocene epoch in Azerbaijan will let us make corrections in the dating of rock depictions. Fast extermination of these animals was taking place during military campaigns of Skiffs, Huns, Kipchaks and Mongols, and later during the medieval driving-in hunting on the deer in the forests of Gilan, Karabakh by persian shakhs, khans and beks, the bright witness to which are depictions of hunting scenes on the rocks of Gobustan, Kelbadjar, Gemigaya. Revealed remains of bones of a deer in the most ancient caves of Gobustan and also numerous depictions of these animals are the veritable prove to the fact that these types of animals were one of the main objects of hunting of a Paleolithic hunter. Alongside with bones of gazelles on “Djeyranlar”, “Gaya-arasi” sites on Kichikdash mountain upper Paleolithic inventory was also found out [Dj.Rustamov,1986]. One of the most numerous rock depictions are besoar goats - Capra aegagrus Erxl.. Analogous depictions are met on the late Bronze ceramics of Eastern Caucasus- on the clay vessels of burial mounds of the valley

of Gandja river, Khanlar, Kiligdag and so on [M.Guseynova, 1989], also on the metal ware of Western Azerbaijan. Remains of besoar goats (Capra aegagrus Erxl.) on the territory of Azerbaijan are known to us from Neolithic and Bronze settlements of Gobustan, Apsheron, Gemigaya (Nakhichevan) and Kelbadjar. In Nakhichevan this type has been kept until recent times along Zangezur mountain range and its southern slopes, especially numerous, they were in Negram mountains between Djulfa and Ordubad and on Ilanli-dag. Existence of Capra aegagrus Erxl. in the Bronze epoch is also confirmed by rock depictions of goats, which belong to this period. Remains of boars in Azerbaijan have been known to us since Quaternaire period. Rock pictures of boars and revealed in the burials fangs of boars in Gobustan confirm the existence of these animals on this territory approximately since IV thousand years b.c. Depictions of leopards and lions on the rocks of Gobustan are dated by later periods. The depiction of big fish- probably dolphin, engraved on the rock, was found on Kichikdash (stone №5). At present dolphins in the Caspian sea do not live. We have information, that dolphins Delphinus delphis L. lived in the Caspian Sea at the period of Upper Pleistocene. Binagadi deposits are of main importance not only for the decision of great historical problems, but also very important exact-historical questions, such as geological age of late Paleolith (Upper Pleistocene) and also separate epochs, paleographic conditions of the time of habitation of upperpaleolithic people. At the same time geological-geomorphologic materials served as a basis for the creation of scheme of relative age of sites of this region, particularly of Gobustan. However, even today, there are a lot of not clear and problematic questions. The main reason is not enough styding (especially by laboratory methods). Apsheron peninsula at the epoch of Late Bronze and Iron represented modern landscape-halfdesert with highlands, seldom reaching 300-400m. More dismembered relief has today the southwestern part, which is connected with various lithological composition of rocks-clay, sands, limestones of Tertiary period. Apsheron peninsula is washed by the Caspian Sea from three parts, and from the west it is protected by massive mountain rocks of the Caucasus ridge. The climate of Apsheron is subtropical. The peculiar climate of Apsheron is formed under the influence of the whole range of facts. Hot breath of Caspian and Kura steppes, the entry from the northwest and northeast of cold masses make Apsheron the arena of the vast transfer of the air masses. Apsheron is a mountainous area. Fold mountainous structure of the surface is very well seen from the western part of the peninsula; in the eastern part mountains are cut off by sea erosion and closed by its deposits. Here the plain relief was formed. All this area is covered with ancient Caspian and modern deposits. To the extreme eastern part of this lowland, which is directly adjoining to the shore of the Caspian Sea, the presence of sand dunes, which are stretching almost uninterruptedly along the coast of the sea till Apsheron peninsula includingly is characteristic. In the central part of the peninsula, in the wide direction Binagadi highland is stretching, which is surrounded by Beyuk-shor, Masazir and Mirdalabi lakes [E.Shikhlinskiy,1948]. Gemigaya is situated on the highest pick of the Small Caucasus on the territory of Azerbaijan - Kapidjik on the height of 3096m above the sea level and is formed by metamorphic deposits. The pick of the mountain collapsed. Big boulders scattered on the south and southwestern slope, and in the course of last milleniums, their surface was polished under the influence of slides and glaciers. Thousands of petroglyphs of the epoch of Neolith, Bronze and early Iron ages were revealed on these rocks [B.Aliyev, 1992]. The main part of Kelbadjar consists of volcanic highland. This region is formed by Quaternary lavas. Rock pictures were mainly fixed on the coasts of alpine lakes, the part of which is occupied with craters of extinct volcanoes. Coastal regions of these lakes are rich with deposits of obsidian, flint, schist, and granite. G.Ismail-zade considers that the presence of these rocks became the main reason of settlements of these places from the ancient times [G.Ismailov, 1987]. In this region more than 4000 pictures are dated by the Bronze epoch. We brought only the most important of the facts, characterizing changes of geographical environment in Upper Pleistocene and Holocene. The real situation is much more complicated. Landscape zones existed. Relief and contours of land and sea had quite different view. Results of such observations give us an opportunity to look at chronological dating of the ancient works of art in a new way.

FEBLOT-AUGUSTINS Jehanne

Du Néolithique ancien au Néolithique moyen I à la grotte du Gardon (Ain): l'apport des études de provenance des matériaux lithiques

Dans le haut bassin rhodanien, la grotte du Gardon, au contact de deux ensembles géographiques bien individualisés, à l'ouest la plaine alluviale de l'Ain, à l'est les premières collines du Bugey adossés à la moyenne montagne, offre une longue stratigraphie qui débute avec des occupations rapportées au Néolithique ancien méridional. De par sa localisation, elle apparaît comme un terrain de choix pour étudier l'avancée de la Néolithisation et les conséquences de sa mise en place sur la mobilité des groupes, les phénomènes d'interaction ou de frontière entre zones d'influences

durant le Néolithique moyen I. Ces questions sont abordées par le biais d'une étude de provenances des matériaux lithiques, qui s'inscrit en complément de l'étude menée sur l'évolution des systèmes techno-économiques (Th. Perrin 2003). Cette approche permet de préciser les modalités d'expansion du Néolithique ancien méridional dans le haut bassin rhodanien, avec pour la couche 58 un exemple de mobilité pionnière à incursions exploratoires en bordure de moyenne montagne (Chartreuse, plateau de la Michaille dans le Bugey oriental), suivie d'une deuxième vague de population plus directe pour la couche 56, où l'on peut cerner une permanence des relations avec la zone méridionale d'origine (grande lame en silex du Vacluse). Ces relations sont interrompues au Néolithique moyen I, confirmant l'existence de particularismes régionaux dès l'individualisation de cet ensemble chrono-culturel. En effet, l'espace défini par les provenances associées aux couches 52 et 50 semble coïncider avec l'aire d'extension méridionale de la première phase du Saint-Uze, et les outils en silex les plus lointains (Drôme) signaleraient des contacts s'assortissant d'échanges avec les groupes Saint-Uze de la moyenne vallée du Rhône. Dans la couche 49, consécutivement à l'expansion septentrionale du Chasséen, les approvisionnements méridionaux deviennent strictement régionaux (Bugey), témoignant de la restriction de la sphère culturelle du Saint-Uze lors de sa phase récente ou finale et suggérant que des relations ne se sont pas instaurées entre porteurs du Saint-Uze et du Chasséen.

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Organisation of living-floors in the site of Riparo Tagliente (Verona, Italy) during the Late Epigravettian. An integrated analysis of technological and palaeoeconomic attributes and spatial data with G.I.S. systems

Riparo Tagliente (Stallavena di Grezzana, Verona) lies in the Italian Prealps, Lessini Mountains, on the Valpantena valley bottom, at an altitude of about 250 mt a.s.l. It is the first site so far known in the Southern Alps to be occupied in the Late Glacial, after the melting of the Alpine glaciers. The Late Epigravettian series, which develops over a width of about 2 m, documents an occupation of this rock-shelter from the Ancient Dryas to the Allerød (Bartolomei et alii 1982). Extensive investigations carried out since the late '70s allow to affirm that during the whole period, the site was settled according to a repetitive and constant model of spatial organisation. We can therefore recognize an inner area, protected by the overhang of the rock-shelter, where dwelling structures and fireplaces can be found and an outer one, characterised by the presence of huge concentrations of various categories of findings (ashes, faunal remains, lithic artefacts) according to different zones (Fontana et alii 2002, Guerreschi and Fontana 2004). This paper focuses on an integrated analysis of technological and economic attributes from one of these concentrations, known as S.U. 11. It is based on the integration of spatial data obtained by map digitalisation of the findings identified, and of attributes resulting from the analytical study of basically two categories of finds: lithic artefacts and faunal remains. By this study we would like to arise different issues. First, to investigate the impact of natural processes and of anthropic agents in the formation of the archaeological record. Secondly, to understand the origin of such concentrations: are these the result of activities carried out on place or did they form after the accumulation of discarded by-products processed elsewhere? Last but not least to analyse the systems of natural resource exploitation and spatial organisation of the living-floors within the site in the aim to detect behavioural patterns relating both to the economic and social sphere.

FORENBAHER Stašo

Shepherds of a Coastal Range: Archaeological potential of the Velebit Mountain (Eastern Adriatic)

The limestone summits of Velebit, a long coastal range overlooking the Eastern Adriatic, reach the elevation of around 1700 meters just a few kilometers away from the shore. They define a sharp boundary between the contrasting environments of maritime and continental sides of the mountain. Different environmental zones, stacked one above another along the steep slopes, enhance the variability of the landscape, making the area attractive for seasonal pastoralists. Only preliminary archaeological fieldwork has been carried out on the mountain, but its results clearly indicate that herders were using the area ever since farming was introduced around 6000 B.C. Common problems of locating and recording the evidence of their ephemeral presence are compounded by intensive erosion which has

obliterated or buried most of the open air sites in this heavily karstified landscape. The archaeological potential of Velebit is nevertheless great, for several reasons. Transhumant sheepherding has survived as the most important segment of economy into the modern times, providing the possibility of ethnoarchaeological research. Rich archival records and other legal monuments regulating access to pasture and water rights extend from the relatively recent Austro-Hungarian times back to the era of Roman imperial administration. Finally, thick stratigraphic sequences in karstic caves provide the opportunity to explore the long-term change in herding practices since the time of the first Neolithic farmers.

GRIMALDI Stefano

Settlement strategies in the early Mesolithic northeastern Italy

An hypothesis of settlement and mobility system adopted by early Mesolithic human groups in northeastern Italian Alps is discussed. Archaeological and ethnographical data are shown to suggest 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 in order to face the rapid and dramatic climatic variations occurred during the Preboreal and Boreal transition.

LEITNER Walter

The oldest silex and rock-crystal mining traces in high alpine region

During the last years archaeological research work on the stone age period in high alpine region has been done intensively. The different raw materials of stone, of which hunters, gatherers and shepherds manufactured their tools, form the emphasis of this project. Silex (flintstone) without doubt has the most important significance. However we often note that local ressources of raw-materials were not sufficient and not from a good quality too and had therefore to be transported over a long distance. As a result of new prospections in the western landscape of Austria we have first indications that primary layers in high alpine region in fact existed and were probably already quarried in the mesolithic period.. Especially radiolarite and rock-crystal play a decisive role .

LIPPERT Andreas

Settlement and early copper mining in the area of Bischofshofen (Salzburg, Austria)

Earliest traces of settlement in the inner mountainous part of Salzburg of the Salzach-Pongau are dating back to the beginnings of the Neolithic Age, i.e. 6 th mill. B. C. Copper mining in the surface zones was started thereafter already in the middle of the 4 th mill. B. C. being proved by pollenanalyses as well as archaeological sites. In the 3 rd mill. copper ores were not exploited at all. Only in the end of the Early Bronze Age (17 th cent. B. C.) copper mining was resumed , now in underground, and within a short time very much intensified. Changing settlement patterns can be realised soon after between the Middle Bronze Age and the Early Iron Age (from about 1600 until the 6 th cent. B. C.). They give close insights into social structures of mining and farming communities in a central area of the Eastern Alps.

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Le chemin de Montlleó, une route d'haute montagne dans le Magdalénien des Pyrénées catalanes

MARZTLUFF Michel, VAQUER Jean

Les Pyrénées pendant l'Épipaléolithique-Mésolithique: frontière naturelle ou espace d'échanges culturels ?

Le rôle de barrière culturelle des montagnes pyrénéennes peut être mieux apprécié en fonction des récentes données paléoenvironnementales. Ainsi, les hautes vallées des Pyrénées sèches sont accessibles à partir de 16500 BP (tourbières des cirques du Carlit, vers 2 200 m d'altitude, ce que confirme une pénétration magdalénienne en Cerdagne vers 15500 BP, alors que l'aire soumise aux influences atlantiques est restée plus longtemps inhospitalière. A la fin du Tardiglaciaire cependant, durand l'amélioration Bølling-Allerød, une colonisation des vallées montagnardes est attestée sur les deux versants jusqu'au cœur de la chaîne. Elle constitue un champ d'observation privilégié pour estimer l'influence des cultures alors représentées dans les bassins de l'Èbre et de la Garonne lorsque se constitue l'Azilien. Des travaux anciens en haute Ariège avaient déjà mis l'accent sur ces échanges que confirment les fouilles de la Balma de la Margineda, en Andorre. La péjoration climatique du Dryas III semble accompagner une plus nette différenciation dans le temps et sur l'espace des sociétés de chasseurs-collecteurs. Tout en tenant compte des biais liés à la conservation des sites, il semble que de nouvelles trajectoires culturelles affectent ensuite les groupes représentées dans des vallées débouchant sur les piémonts atlantiques (Buholoup) ou méditerranéens (Margineda).

MESTER Zsolt

Adaptation to the mountain environment in the Palaeolithic in Hungary

Bükk Mountain is the highest mountain range in Hungary. It is mostly composed of Mesozoic rocks and have a huge amount of karstic cavities. Many cave yielded the traces of Prehistoric occupation. Because of this region is well investigated by Hungarian research from 1906 up to date, we can try to analyse settlement strategies during the Palaeolithic. Reconsidering the geomorphology (valley system, distribution of cavities), the hydrogeology (springs and streams), the geological composition (raw material sources), the ecological zones (vegetation and fauna) of the area, and comparing them with the data of the archaeological sites, we can see a complex adaptation to the mountain environment

MEVEL Ludovic, BINTZ Pierre, BRESSY Céline, MONIN Gilles, PION Gilbert

Quel(s) modèle(s) pour le peuplement et l'azilianisation des Alpes du nord: quelques éléments de réponses à partir des stratégies d'acquisition en matières premières lithiques et leur exploitation pendant le tardiglaciaire.

Les changements affectant les sociétés humaines à la fin du paléolithique supérieur ont été caractérisés dans toutes les régions occupées par les groupes magdaléniens. Le sud-est de la France et notamment les Alpes du nord, sont propices à l'étude de ces transformations des traditions culturelles. Ils sont visibles dans des milieux aux particularismes géographiques et environnementaux contrastés. Travailler sur l'évolution des traditions culturelles est possible par une approche pluridisciplinaire des occupations et nous renseigne sur deux phénomènes indépendants mais concomitants: 1- Les dynamiques de peuplements des milieux de moyennes montagnes; 2- Les rythmes et les spécificités de l'azilianisation dans ces régions; Ces derniers constituent des outils de modélisation concernant l'évolution de la fonction et du fonctionnement des sites préhistoriques. La fin du paléolithique supérieur dans les Alpes du nord françaises est actuellement documentée par à une vingtaine de sites préhistoriques découverts depuis le début du 20ème siècle. Loin d'avoir livré toutes leurs informations, certains d'entres eux font actuellement l'objet d'un réexamen critique basé sur les sources archéologiques. Ces nouvelles approches archéo-stratigraphiques et techno-économiques, permettent de réviser le statut et la valeur informative de chaque site, et ainsi de fiabiliser les corpus étudiés. On peut alors percevoir l'évolution des industries et des comportements humains non plus sous le seul angle de la typologie, mais de façon plus objective. Ces outils se révèlent indispensables pour appréhender les comportements des groupes non plus seulement dans une perspective strictement technique, mais pour une reconstitution paléo-sociologique ou paléo-historique de

l'occupation humaine de ces régions. Mais comprendre l'évolution des comportements en milieu montagneux, nécessitent de porter notre regard sur les régions limitrophes afin de comprendre comment s'insèrent ces phénomènes dans le cadre des innovations qui marquent plus généralement les sociétés du Tardiglaciaire européen.

MONTET-WHITE Anta

Use of mountain natural ressources in the late Paleolithic: a brief review of the site function of mountain localities in the Late Paleolithic and discussion of their role in the settlement systems.

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Exploitation du mileu montagnard dans le Moustèrien final: la Grotte du Noisetier à Fréchet-Aure (Pyrénéèes françaises)

La Grotte du Noisetier se situe dans la Vallée d'Aure, sur la commune de Fréchet-Aure (Pyrénées centrales françaises). Elle s'ouvre à 825 m d'altitude, soit à une altitude relative d'environ 145 m par rapport au fond de la vallée où coule la Neste. Exploré initialement sur quelques mètres carrés par M. Allard entre 1987 et 1993, le site renferme une séquence comportant plusieurs niveaux d'occupation du Moustérien final correspondant à une phase tempérée du stade isotopique 3. Depuis 2004, il fait l'objet d'un nouveau programme de recherche pluridisciplinaire incluant une reprise de la fouille. Le silex est absent dans l'environnement immédiat ; les quelques vestiges produits aux dépens de ce matériau ont été importés depuis une ou plusieurs sources situées à l'extérieur de la chaîne pyrénéenne. L'essentiel de l'industrie a été réalisé aux dépens de matériaux locaux disponibles dans les formations alluviales de la Neste (quartzites, lydiennes, schistes, etc.). L'industrie se compose essentiellement de produits et de sous-produits de débitage (nucléus Discoïdes, pointes pseudo-Levallois). L'outillage est peu abondant (racloirs, denticulés). Toutefois, la mise au jour d'un biface et d'un hachereau, inattendus dans ce contexte et dans cette partie des Pyrénées, ouvre de nouvelles perspectives de comparaison. Les ensembles osseux de la Grotte du Noisetier sont largement dominés par les ongulés de montagne, Bouquetin mais surtout Isard. Les spectres fauniques indiquent des conditions climatiques relativement clémentes (très faible représentation du Renne) et un environnement ouvert (rareté du Chevreuil, absence du Sanglier). Les deux espèces dominantes semblent relever d'histoires taphonomiques distinctes. Les os d'Isard portent de nombreuses traces de digestion et leur représentation anatomique particulière pourrait traduire une accumulation liée à l'action du Gypaète barbu. En revanche, les os de Bouquetin portent de très nombreuses traces d'actions anthropiques (stries de décarnisation, de désarticulation, impacts, etc.) et pourraient résulter d'expéditions de chasse en moyenne montagne. Si l'existence de sites spécialisés exploités au cours de déplacements logistiques par quelques membres du groupe est largement admise pour le Magdalénien, en revanche, les modèles généralement proposés pour le Moustérien reposent sur l'idée d'une mobilité résidentielle des groupes de néandertaliens. La Grotte du Noisetier, très proche de certains sites magdaléniens pyrénéens par de nombreux aspects (situation géographique, spectre faunique dominé par les ongulés de montagne, sporadicité des occupations), offre l'opportunité de s'interroger sur d'éventuels déplacements logistiques de la part des groupes néandertaliens en relation avec l'exploitation du milieu montagnard et, plus largement, de discuter des capacités cognitives des néandertaliens par rapport à celles des hommes modernes.

PACHER Martina

Upper Pleistocene environment and human occupation of the Eastern Alpine region

The Eastern Alpine region is characterized by various landscapes that provide different condition for human and animal occupation but also for the preservation of sites. Cave sites are mainly restricted to calcareous areas while towards the north the loess area provides excellent condition for the preservation of open-air sites. Sites from the loess are used for

comparison, only. Geographical situations and altitudes provide various living areas characterized by the dissimilarity in concentration of sites as well as their chronological position. Differences are evident between the south and north of the Central Alps as well as between the high Alpine region, the moderate mountain area, larger basins, and the adjacent lowland areas towards the south and east. The loess area toward the north provides a distinct living area characterized by the mammoth steppe environment. Based on a comprehensive compilation of information from the various sites and new results from recent case studies (e.g. Potočka zijalka, Griffener Tropfsteinhöhle) environmental conditions and human occupation of the Eastern Alpine region is reconstructed, as far as possible. Evidence of Neanderthal man is rather scarce and so far only confirmed by cultural remains from the loess area as well as from sites south of the Alps (e.g. Griffener Tropfsteinhöhle, caves near Graz, Divje babe). Its appearance in the high Alpine region is suggested but needs to be regarded with caution. The Upper Pleistocene is especially rich at the loess area towards the north while in the Alpine areas evidences are rather rare and based on small assemblages (e.g. Liegl loch, Drachenhöhle near Mixnitz). The only exception in the high Alpine region is the rich assemblages from Potočka zijalka, Slovenia. During the Late Glacial Maximum few sites are known north of the Alps and only Nixloch cave is confirmed within the Alpine area. Human occupation of the mountain area starts again with the Epipaleolithic or Late Glacial remains. Mainly small assemblages are known from the Eastern Alps that also reach the high alpine area. Environmental conditions and faunal composition changed through time. Cave bear is abundant during OIS 3 and dominates especially in high Alpine sites, accompanied by a few additionally preserved faunal elements. Faunal composition in this study mainly focuses on large mammal remains. It is in general more diverse at lowland sites but often a mixing of remains occurred. Contemporaneousness of species needs to be reconstructed by radiometric data and taphonomic analysis. Besides cave bear sites a few hyena dens are proofed while other sites show clear influence of human hunting activities or an accumulation of remains by smaller carnivores. Re-occupation data after the Late Glacial maximum by humans correspond to radiometric dates from various faunal elements, such as bears or ibex. Various natural traps provide additional information for the Late Glacial and Holocene occupation history of the Eastern Alpine region. The compilation gives a detailed overview on the occupation history of the Eastern Alpine region during the Upper Pleistocene and early Holocene. Many aspects still need to be discussed in the light of new data and methods.

PEDROTTI Annaluisa

Settlement strategies in Northeastern Alps from Neolithic to Copper Age: some examples

PERRIN Thomas

The neolithisation of the Rhone valley and its margins

In southern France, the first Neolithic impacts appear sporadically around 5800/5700 calBC and more clearly around 5500/5400 calBC (Cardial and Epicardial). The analysis of the geographical distribution of the Early Neolithic sites according to their dating highlights a rising movement along the Rhone valley of those first farming populations. This progression is rather fast since this Early Neolithic is attested around 5200 calBC in the cave of the Gardon, in Ain, that is nearly 300 km in less than two centuries. On this site, we showed the coexistence of farming populations with hunters – gatherers Mesolithic groups. In this lecture, we will thus try to show if the progression of the Early Neolithic towards the north of the Rhone valley involve a rejection of the autochthonous populations on the mountainous margins of the basin, or on the opposite, if the presence of these populations had a direct effect (positive or negative) on the progression speed of the neolithisation. In corollary with these interrogations, we'll seek to show if there is a functional variability of the sites according to their more or less mountainous position during this installation phase of the Neolithic.

PION Gilbert

Processus évolutifs essentiels dans le paléoenvironnement et les industries de la fin du Tardiglaciaire dans les Alpes du Nord françaises et le Jura méridional

L'analyse des données récentes issues des recherches sur les sites naturels non anthropisés et les sites majeurs à occupations humaines de la fin du Tardiglaciaire dans notre région des Alpes du Nord françaises et du Jura méridional permettent d'émettre quelques hypothèses pour expliquer les évolutions technologiques constatées au sein des assemblages lithiques et osseux utilisés par l'homme. C'est en effet dans la période biozonique d'environ un millénaire qui englobe la deuxième partie du Bølling, le Dryas moyen et le début de l'Allerød, que ces évolutions apparaissent de façon significative et qu'elles sont synchrones de celles de l'environnement végétal et animal. La recomposition du monde animal – en particulier la disparition du renne dans notre région – constatée dans les spectres de la faune chassée est probablement à l'origine des nouvelles stratégies de chasse perçues à travers les évolutions technologiques, plus particulièrement dans les armatures. La réflexion portera donc sur les raisons qui nous apparaissent essentielles pour expliquer la fin du Magdalénien et l'émergence de l'Épipaléolithique dans cette période de transition. On retiendra et développera les deux hypothèses probables pour expliquer cette évolution culturelle, soit par un processus interne au groupe ou par acculturation progressive ou forcée issue des contacts exogènes avec d'autres groupes plus ou moins contemporains mais plus innovateurs. Cette communication s'appuiera sur certains résultats obtenus dans le cadre d'un PCR dirigé par l'auteur et sur l'essentiel de la thèse du même auteur.

REZI-KATÓ Gábor

Data on the role of caves in cultural history at the karstic region of the NE Hungary

The Aggtelek and the Slovakian karstic region's territory composes a so coherent historical unity that any archaeological research should be done accordingly. An excellent example for this is the Szögliget-Hosszútető cave excavation in the North-East of Hungary, where since 2001 there have been a common Hungarian-Slovakian excavation by Hungarian National Museum and Nitra Archaeological Institute. Since almost all the caves in Hungary were excavated in the first part of the 20th century, this cave could be an important site. The geological researchers' probe in the cave made a 5-m-filling in, with percepted archeological findings in several strata. In the course of excavations a 6000 year-old human presence was traceable and demonstrable in cultural strata. The excavation has raised several problems both in technical and arcaelogical meaning. The paper which focuses on archaeological results also would like to make an attempt at drawing attention to its implication.

TILLET Thierry

**Caches et entrepos au Paléolithique:
une nécessité dans l'exploitation cynégétique saisonnière des milieux montagnards**

VALDE-NOVAK Pawel

Neolithic in the European Mid-Mountains

The Neolithisation of the mountains is often seen as an issue in the first line related to the alpine zone. However, the mid-mountainous areas are also known as territories intensively used by early agricultural communities. From such areas like Black Forest and Bavarian Forest in Germany or Polish Carpathians, very specific traces of human occupation are registered in the last years. Based of collecting of archive data and the results of surveys a model of seasonal pastoral (transhumance) exploitation of mountainous territories was elaborated. Frequent location of settlement sites in regions between river sources and the edge of the upland in the vicinity of local saddles and mountains cols of special significance.

WALKER Nathan

Locating micro-refugia in periglacial environments during the LGM

The occupation of Northern Europe during the LGM has until recently been considered unlikely at best, impossible at worst. This view has had to be re-examined thanks to the finds by Street and Terberger (1998) in Germany. The Rhineland site of Weisbaden-Igstadt is the first accepted site within the area of the North European Plain which has been satisfactorily dated to the LGM. This is an important step forward. It proves that occupation of the region was possible, that humans were able to adapt to the harsh conditions present in this environment. This idea has been supported for many years by a small number of archaeologists who considered the accepted total abandonment theory unsupportable due to the evidence from other regions. I have produced a number of models for the continued occupation of the Northern European Plain throughout the LGM. The overall aim of the project is to create a more detailed picture of the human occupation of these periglacial zones and the adaptations these harsh sub-antarctic and sub-arctic conditions necessitated. I plan to test the similarities between occupations in periglacial zones around the world. It would seem from the work done in these regions previously, that it is highly likely that the harsh climatic and environmental conditions experienced in these periglacial environments would have prompted a number of similar reactions among the human populations of these regions. This will be concentrated mainly on changes in site location and site use. In this way I will be able to demonstrate the changes in site location during the LGM as an adaptation to the colder climates. From the generalised location data previously published there are links between sites in these areas and their location in the landscape. The models I have produced previously are based on this generalised or macro level environmental data and act to provide general guidelines for site location, in this project I will be refining these models and working more heavily on the micro climatic and topographic level. I aim to provide a set of guidelines to the most likely location of sites within LGM periglacial regions based on environmental factors and the use of topographic features in the landscape for site selection called micro-refugia. Here are a number of elements that would be necessary for the existence of micro-refugia. These micro-refugia are areas that allowed for the possibility that human groups could have survived within the periglacial zones thanks to the shelter that was provided from the wind within them. The presence of refugia for flora is well known around the world, sheltered areas which allow the continued existence of certain types of plant life in areas which otherwise were too harsh for their survival. The higher level of biotic diversity would then make them prime locations for human groups to occupy during the LGM.

Colloquium 31

"Mountain environments in prehistoric Europe:

settlement and mobility strategies from the Palaeolithic to the early Bronze Age"

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