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MESOLIFE
A MESOLITHIC PERSPECTIVE ON ALPINE AND NEIGHBOURING TERRITORIES

Selva di Cadore, Italy, June 11th-14th, 2014

ABSTRACT BOOK

Edited by
FEDERICA FONTANA,
DAVIDE VISENTIN &
URSULA WIERER

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MesoLife

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Abstract book

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Selva di Cadore, Italy, June 11th-14th, 2014

Organized by:

Università degli Studi di Ferrara
Università degli Studi di Siena
Comune di Selva di Cadore
Soprintendenza per i Beni Archeologici del Veneto

In collaboration with:

Associazione Amici del Museo di Selva di Cadore
Soprintendenza per i Beni Archeologici della Toscana

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Museo Vittorino Cazzetta
Via 4 novembre 51 - 32020 Selva di Cadore (BL), Italy
GPS: 46.45099,12.03907 (WGS84)

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Conference Programme

Wednesday, June 11^{th}

8.30 **Registration**
9.30 **Welcome and conference opening**

Keynote

10.05 **A. Broglio** - *La découverte du Mésolithique dans la Vallée de l'Adige et sur les Dolomites*

Session A - Mesolithic landscapes

10.30 **M. Guélat, J. Bullinger, P. Crotti and G. Pignat** - *The blockshelter of Château-d'Oex: pedosedimentary record of human occupations in the Swiss Prealps from the Late Glacial to the Mid-Holocene*

10.55 **L. Chaix** - *Evolution of the malacofaunas from the Sauveterrian to the Ancient Neolithic at La Grande-Rivoire (French Alps, Isère, France)*

11.20 **L. Colombo, L. Castelletti, E. Martinelli and S. Motella De Carlo** - *Vegetation landscape in the site of Mondeval (Dolomites – Belluno, Italy) between ancient and recent Holocene*

11.55 **Posters and discussion**

12.30 **Break for lunch**

Session B - Settlement dynamics

13.45 **K. Kompatscher, N.M. Hrozny Kompatscher, U. Wierer and M. Bassetti** - *Settlement and mobility patterns. The Sauveterrian site of Staller Sattel (Antholz, South Tyrol, Italy)*

14.15 **L. Scoz, A. Fedrigotti, F. Cavulli, S. Neri, A. Pedrotti and G. Dalmeri** - *New data on the first human settlements in Western Trentino. The site of Pozza Lavino in the Ledro valley (Trentino-Italy)*

14.40 **F. Rubat Borel, G.L.F. Berruti, D. Berté, M. Bussi, S. Daffara, L. Scoz and G. Siega** - *First signs of Mesolithic occupation in "Alta Val Sessera" (Bi)*

15.05 **D. Visentin, F. Fontana, P. Cavallari and G. Nenzioni** - *The Sauveterrian of the Emilian Po plain: intra-site spatial organization face to face*

15.30 **Coffee break**

15.55 **S. Merzoug, S. Hachi, R. Belambri, S. Aouimeur, W. Eddergach, L. Aoudia-Chouakri, L. Ferhani and A. Fergui** - *New insights into Capsian Culture (Epipalaeolithic): First results from Medjez I excavation (Sétif, Algeria)*

16.20 **Posters and discussion**

Keynote

17.00 **D. Schäfer** - *The geoarchaeological project Ullafelsen (Tyrol, Austria)*

18.00 **Happy hour**

18.30 **Visit to Vittorino Cazzetta Museum**

Thursday, June 12^{th}

Session C - Subsistence strategies

09.00 **A.C. Colonese, W. Landini, D. Lo Vetro, Z. di Giuseppe and F. Martini** - *Mesolithic coastal exploitation in NW Sicily: a new insight from Grotta d'Oriente and Cala Mancina*

09.25 **M. Bertolini, E. Cristiani, M. Modolo, P. Visentini and M. Romandini** - *Late Epigravettian and Mesolithic foragers of the Julian Prealps. Hunting strategies and ornamental traditions at Riparo Biarzo (UD)*

09.50 **U. Thun Hohenstein, G. Petrucci, G. Rinaldi, S. Zanini, M.C. Turrini, A. Guerreschi and F. Fontana** - *Red deer vs. ibex hunting at a seasonal base camp in the Dolomites: Mondeval de Sora, site 1, sectors I and III*

10.15 **L. Betti, P. Boscato and U. Wierer** - *Seasonal dating of fish and macrofaunal remains from the early Mesolithic site Galgenbühel/Dos de la Forca (South Tyrol, Italy)*

10.40 **Posters and discussion**

11.15 **Coffee break**

Session D - Lithic, bone & other technologies

11.40 **E. David** - *Technocomplexes et cultural affiliations of Mesolithic groups, what gives the bone and antler industry?*

12.05 **S. Arrighi, M. Bazzanella, F. Boschin and U. Wierer** - *How to make and to use a bone spatula. The case of the Mesolithic site of Galgenbühel/Dos de la Forca (Salurn/Salorno, BZ-Italy)*

12.30 **A. Angelin, A. Bridault, J.L. Brochier, L. Chaix, L. Chesnaux, B. Marquebielle, L. Martin, P.Y. Nicod, R. Picavet and D. Vannieuwenhuyse** - *The First Mesolithic in the Alps: new data from the rockshelter of La Grande Rivoire (Vercors, Isère, France)*

12.55 **Break for lunch**

14.15 **D. Visentin, S. Bertola, M. Peresani and S. Ziggiotti** - *Flint provisioning and exploitation during the Sauveterrian on the Cansiglio plateau. The Casera Lissandri 17 site*

14.40 **R. Poggiani Keller, L. Baglioni, F. Martini and F. Magri** - *Mesolithic frequentation at Cividate Camuno - Via Palazzo (Brescia)*

15.05 **F. Martini and D. Lo Vetro** - *Mesolithic in Central-Southern Italy: an overview on lithic productions*

15.30 **M. Calattini and C. Tessaro** - *The Mesolithic at Mura Cave (Monopoli, Italy)*

15.55 **Coffee break**

16.20 **C. Collina** - *The lithic industry of the Uzzo Cave (Trapani, Sicily) and the issue of the chaînes opératoires and the lithic traditions of the Recent Mesolithic and the Early Neolithic in Southern Italy*

16.45 **Posters and discussion**

20.00 **Conference dinner**

Friday, June 13^{th}

Session E - I^{st} vs. II^{nd} Mesolithic

09.00 **T. Perrin and E. Defranould** - *The Montclus rock shelter (Gard) and the continuity hypothesis between Ist and IInd Mesolithic in southern France*

09.25 **A. Boguszewski** - *Some remarks about the chrono-cultural changes looking at the Mesolithic cores from North Italy, Belgium and Poland*

09.50 **S. Philibert** - *I st vs. II nd Mesolithic in southern France: Functional approach of techno-economic behavior through Castelnovian of Montclus rock shelter (Gard)*

10.15 **E. Flor, R. Duches, M. Peresani and F. Fontana** - *Romagnano Loc III rockshelter (NE Italy): an almost complete series for a diachronical perspective on Mesolithic lithic technology*

10.40 **Posters and discussion**

11.15 **Coffee break**

Session F - Mesolithic territories

11.40 **E. Brinch Petersen** - *Social groupings of the Maglemosian – A northeuropean Lowland Case between 9 500 and 6 500 calBC*

12.05 **E. Cristiani and D. Borić** - *The Mesolithic of Montenegro*

12.30 **D. Komšo** - *The Mesolithic of Croatia*

12.55 **Break for lunch**

14.15 **G.C. Fiappo, A. Fontana and A. Pessina** - *Mesolithic high altitude frequentation of the Friuli region (Northern Italy)*

14.40 **F. Fontana and D. Visentin** - *Early Mesolithic highland and lowland occupation between the Venetian Alps and the Emilian Apennines (Northern Italy)*

15.05 **S. Bertola and D. Schäfer** - *The hunter-gatherers of Ullafelsen (Tyrol, A): where did they come from?*

15.30 **M. Cornelissen and T. Reitmaier** - *Filling the gap – Recent Mesolithic discoveries in the Swiss Alps*

15.55 **Coffee break**

16.20 **A. Henry, A. Chevalier, B. Marquebielle, G. Constans, N. Valdeyron, B. Bosc-Zanardo** - *Management of resources and territories in the Mesolithic of southern France: the case of Quercy*

16.45 **Posters and discussion**

17.10 **Concluding remarks**

Saturday, June 14^{th}

Post-conference field trips

A - Mondeval de Sora and the Belluno Dolomites

B - Staller Sattel/Passo Stalle and the Lake Obersee

Posters

Session A - Mesolithic landscapes

C. Berto, E. Luzi, A. Guerreschi and F. Fontana - *Small mammals from Mondeval de Sora (San Vito di Cadore, Belluno): paleoenvironmental differences between early and late Holocene*

M. Gala, A. Tagliacozzo and U. Wierer - *Bird remains from the Mesolithic site of Dos de la Forca-Galgenbühel (Salorno)*

M. Marchesini, S. Marvelli, I. Gobbo and E. Rizzoli - *Vegetal landscape and environment in the Mesolithic site of Le Mose-Piacenza (Northern Italy)*

Session B - Settlement dynamics

C. Franco - *Excavations at the high altitude Mesolithic site of Pian de La Lóra (Val Civetta – Venetian Dolomites). New data on the last hunter-gatherers of northern Italy*

F. Fontana, P. Mozzi, D. Visentin, T. Abbà, S. Primon, R. Corradi and M.E. Gerhardinger - *Looking for the Mesolithic in the Venetian Po Plain: first results from the Sile river springs area (North-Eastern Italy)*

A. Tagliacozzo, I. Fiore, L. Calcagnile and V. Tiné - *Grotta del Santuario della Madonna at Praia a Mare (Cosenza): new excavations and chronological data of the Mesolithic levels*

I. Fiore, D. Lo Vetro, B. Pino Uria and A. Tagliacozzo - *Grotta del Santuario della Madonna at Praia a Mare (Cosenza): spatial organization, fauna and lithic industries of the Mesolithic levels (2008-2011 excavations)*

Session C - Subsistence strategies

D. Lo Vetro, A.C. Colonese, M.A. Mannino, K.D. Thomas, Z. Di Giuseppe and F. Martini - *The Mesolithic occupation at the site of Isolidda (San Vito lo Capo), Sicily: new data*

M. Gala and A. Tagliacozzo - *The raptors of Grotta del Santuario della Madonna di Praia a Mare (Cosenza, Italy)*

A. Moroni, P. Boscato, G. Di Pasquale, E. Allevato, G. Manganelli, F. Di Bella and P. Gambassini - *The Mesolithic occupation at Grotta della Cala (Marina di Camerota – Salerno – Italy)*

U. Thun Hohenstein and M. Bertolini - *Exploitation of Mesolithic faunal resources at Riparo Gaban (Trento): preliminary results of taphonomical analyses*

V. Gazzoni, G. Goude, E. Herrscher, G. Dalmeri, R. Duches, E. Mottes, F. Nicolis, A. Guerreschi and F. Fontana - *Palaeodiet of Mesolithic hunter-gatherers in north-eastern Italy: evidence from the burials of Vatte di Zambana (TN), Mezzocorona (TN) and Mondeval de Sora (BL)*

Session D - Lithic, bone & other technologies

J.F. Gibaja, N. Mazzucco, U. Perales, M. San Millan Lomas, O. García Puchol, M. Rojo and J.J. Cabanilles - *Insights into the Late Mesolithic toolkit: use-wear analysis of the notched blades, case-studies from the Iberian Peninsula*

C. De Stefanis, S. Beyries and D. Binder - *Use-wear analysis of a Castelnovian blade and trapeze assemblage: the Mourre de Sève rock shelter (Sorgues-Vaucluse)*

L. Bassin and M. Cornelissen - *Alpine raw materials and the production and use of scrapers at the Swiss Late Mesolithic site of Arconciel/La Souche*

R. Poggiani Keller, D. Lo Vetro, F. Magri, F. Martini and L. Timpanelli - *Mesolithic findings from the area of the engraved boulders at Cemmo (Lombardia)*

F. Valletta, S. Bertola, F. Fontana and A. Guerreschi - *The Mesolithic lithic assemblage of VF1, sector III, of Mondeval de Sora (BL, Italy). Economy, technology and typology*

F. Fontana, S. Bertola, F. Briois, E. Cristiani, E. David and A. Guerreschi - *The Castelnovian burial of Mondeval de Sora (San Vito di Cadore, Belluno, Italy): a specialised flint knapper's grave?*

S. Ferrari and F. Fontana - *The Castelnovian of Emilia. An overview on technical systems*

F. Martini, D. Lo Vetro and L. Timpanelli - *New insight on the Romito Shelter (Calabria): the lithic production of the Mesolithic levels*

Session E - Ist vs. IInd Mesolithic

R. Maggi and F. Negrino - *The paradoxical pattern of the Mesolithic evidence in Liguria: piecing together the puzzle*

Session F - Mesolithic territories

M. Bazzanella, N.M. Hrozny Kompatscher, K. Kompatscher - *Mesolithic settlement traces in the area of Latemar, Monte Agnello and Monte Cornón (Fiemme valley, Trentino)*

F. Fontana, D. Visentin, F. Cavulli, F. Carrer, C. Mondini, P. Cesco Frare and A. Pedrotti - *The "Total Archaeology Project" and the Mesolithic occupation of the highland district of San Vito di Cadore*

R. Duches, E. Gilli and M. Peresani - *New data on the Mesolithic from the Alpine foreland: the Montebelluna and Montello area, North-eastern Italy*

Keynote

La découverte du Mésolithique dans la Vallée de l'Adige et sur les Dolomites

A. Broglio

Dipartimento di Studi Umanistici, Università degli Studi di Ferrara, Italy

Les recherches conduites par un groupe de chercheurs de l'Université de Ferrara entre 1968 et 1975 à l'intérieur de trois petits abris, le long du versant droit de la Vallée de l'Adige, aux alentours de la ville de Trento (Vatte di Zambana, Pradestel et Romagnano III) ont permis d'établir une séquence mésolithique détaillée s'étalant sur environ 3.500 années, du Préboreal jusqu'au début de l'Atlantique. Les industries lithiques s'encadrent dans le Sauveterrien et le Castelnovien des régions occidentales de l'Europe du Sud, trouvant des parallèles dans d'autres territoires (Vénétie, Karst de Trieste, régions centrales et septentrionales de la péninsule italienne). Dans le versant méridional des Alpes Orientales, entre la ligne de partage des eaux et les Préalpes de la Vénétie, surtout sur les Dolomites, à partir de 1971 on a signalé, à des altitudes entre 1900 et 2400 m, la présence de centaines de sites mésolithiques contenant des industries du même type ; quelques uns de ces derniers ont été l'objet de fouilles systématiques. Ces sites d'altitude suggèrent que les groupes mésolithiques de la vallée de l'Adige pratiquaient un mode de vie basé sur des migrations saisonnières entre le fond de la vallée et les environnements montagnards proches de la prairie alpine où, pendant la bonne saison, des mammifères de taille moyenne pouvaient être abattus.

Session A - Mesolithic landscapes

Presentations

The blockshelter of Château-d'Oex: pedosedimentary record of human occupations in the Swiss Prealps from the Late Glacial to the Mid-Holocene

M. Guélat[a], J. Bullinger[b], P. Crotti[b] and G. Pignat[c]

[a]SEDIQUA Géosciences, Delémont, Switzerland
[b]Musée d'archéologie et d'histoire, Lausanne, Switzerland
[c]Archéologie cantonale, Lausanne, Switzerland

Situated at an altitude of 1200 m a.s.l., the rockshelter of Château-d'Oex is a calcareous block emerging from an alluvial fan. Geoarchaeological investigations show that the lower part of the sedimentary sequence, which is built up from coarse-grained sediments and reveals no evidence of human occupations, is the result of runoff and frost activity typical of the Bölling-Alleröd interstadial. These clastic fining-upward sediments contain at the top the oldest archaeological layer, dated to 11 000 cal. BC and characterised by Azilian artefacts. As shown by micromorphology, this first occupation horizon includes anthropogenic components and trampling features. After a sedimentary break during the Younger Dryas, the overlying layer is marked by the effects of cold climate conditions at the beginning of the Holocene, as evidenced by freeze-thaw microfabrics. Abundant combustion residues characterize this occupation related to the late Epipalaeolithic (backed points) and dated to 9700 cal. BC. Then fragmentation of the block occurred again and the vegetation gradually colonised the site. Two further occupation layers characterised by anthropogenic components belong to the Early Mesolithic but have not been dated yet. Enlarging of the block fractures by dissolution caused deposition of loamy sediments and collapsing of boulders in the filling. Afterwards, runoff resumed and an important Late Mesolithic occupation, dated to 6000 cal. BC and characterised by well-preserved bone remains, took place. The upper part of the sequence is disturbed by bioturbation. Starting from the 17^{th} century, the rockshelter was no longer occupied.

Evolution of the malacofaunas from the Sauveterrian to the Ancient Neolithic at La Grande-Rivoire (French Alps, Isère, France)

L. Chaix

Département d'archéozoologie, Muséum d'histoire naturelle, Genève, Switzerland

The study of the snails from the Grande–Rivoire shelter, in the French Alps, allows, thanks to an important stratigraphy, to follow the evolution of the local environment of the site.

During Middle Mesolithic and Recent Mesolithic 1, woodland species are well represented (35 to 25% of the total). Mesophilous *taxa* are also abundant, with a good amount of steppic species coming from the rocky slopes overhanging the rockshelter.

Since the Recent Mesolithic 2, a clear diminution of woodland *taxa* is attested, when the open-woodland species are more abundant, until 75% at the beginning of Ancient Neolithic.

The appearance, at the end of the Recent Mesolithic, of *Pomatias elegans*, a snail characteristic of dry and hot environment could be linked to an increase of the temperature or eventually a modification of the vegetal cover near the shelter.

Vegetation landscape in the site of Mondeval (Dolomites - Belluno, Italy) between ancient and recent Holocene

L. Colombo[a], L. Castelletti[b], E. Martinelli[a,b] and S. Motella De Carlo[b]

[a]Università dell'Insubria, Como, Italy
[b]Laboratorio di Archeobiologia dei Musei Civici di Como, Italy

Charcoal analyses are related to sectors I and III of site 1 of Mondeval de Sora (Belluno, Italy), located at 2150 m a.s.l. in the Dolomites. Samples were picked up during the archaeological excavations carried out between 1986 and 2000 by the University of Ferrara. The big quantity of charcoals comes from levels dating back to the Mesolithic (Sauveterrian and Castelnovian) and the smaller quantity to Bronze and Roman Age. Charcoals analyzed are more than 1000 and are mainly constituted of spruce or larch (*Picea/Larix*), followed by pine (type *sylvestris/montana*, probably *P. mugo*) and by cembran pine (*P.cembra*). Broadleaves are rare: green alder (*Alnus viridis*) and traces of *Maloideae* (cf. *Sorbus*).

Green alder is present in a significant quantity already from late Mesolithic, earlier than what results from palynological data, and then in the Bronze Age.

A systematic research on other vegetal macrofossils has shown only scarce cones of larch and blackish cones of alder.

From a qualitative point of view the arboreal (trees and shrubs) vegetation composition seems not to have changed from the Mesolithic to present days.

Posters

Small mammals from Mondeval de Sora (San Vito di Cadore, Belluno): paleoenvironmental differences between early and late Holocene

C. Berto, E. Luzi, A. Guerreschi and F. Fontana

Dipartimento di Studi Umanistici, Università degli Studi di Ferrara, Italy

The Mondeval de Sora terrace opens in the high valley of the Cordevole River, a sub-affluent of the Piave River. The site, also known as Val Fiorentina 1 (VF1), is located at 2.150 m a.s.l. and lies beneath two shelters of a big erratic rock, in an area surrounded by high elevations and connected to other valleys by large passes (Passo Giau) and narrow saddles (Forcella Ambrizzola).

Two sides of the rock have been investigated from 1980s to 2000 (called sectors I and III). At the base of the two sequences, several Mesolithic layers are present and covered by strata that testify human occupation from the proto-historic period (i.e. Bronze age) until sub-actual epochs.

The small mammals remains that come from the two sectors have been analyzed. The total number of individuals of sector I is too low to make any consideration (Total NI= 24) while sector III has a higher NI (148). The Stratigraphic Units of this sector have been grouped into three macro Units: Mesolithic Unit, that corresponds to the early Holocene (Preboreal and Boreal) and Proto-historic and Historic Units that correspond to the late Holocene (Subboreal and Subatlantic).

The substitution of an association dominated by *Microtus arvalis* with one dominated by *M. (T.) gr. multiplex-subterraneus* and *Chionomys nivalis* testifies an environmental change in the area near the site from grassland during the early Holocene to a less grass-covered landscape characterized by exposed rocks during the Subboreal and Subatlantic. The relatively high percentage (up to 10%) of the forest component (*Sciurus vulgaris*, *Myodes glareolus* and *Apodemus* (*Sylvaemus*) above all) in the early Holocene unit testifies the presence of a woodland near the site, around 2000 m a.s.l.

Bird remains from the Mesolithic site of Dos de la Forca-Galgenbühel (Salorno)

M. Gala[a,b], A. Tagliacozzo[a,b] and U. Wierer[c,d]

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[b]Istituto Italiano di Paleontologia Umana, Roma, Italy
[c]Soprintendenza per i Beni Archeologici della Toscana, Firenze, Italy
[d]Dipartimento di Scienze Fisiche, della Terra e dell'Ambiente, Università degli Studi di Siena, Italy

In the course of the research project "Living near the water", finalized at deepening knowledge of the Early Mesolithic rock shelter Galgenbühel/Dos de la Forca located at Salorno, in the Adige Valley (Bolzano Province, Northern Italy), about 600 bird remains of 27 species recovered from the excavations have been analyzed. The species belong mainly to the *Passeriformes* (about 250 remains). Less abundant bones of the *Piciformes*, *Galliformes* (amongst which the Quail, *Coturnix coturnix*, is predominating) and the *Gruiformes* have been identified. *Anseriformes*, *Pelecaniformes*, *Podicipediformes*, *Caradriformes*, *Columbiformes*, diurnal and nocturnal raptors are represented with minor percentages. Forest species are the most numerous, but also species living in other environments, as aquatic birds have to be mentioned. The taphonomic analyses did not allow to define the degree of human action in the formation of the bird bone assemblage, but have opened several questions.

The study has been financed by the Higher Education Support, University and Research Office of the Autonomous Province of Bolzano.

Vegetal landscape at the Mesolithic site of Le Mose (Piacenza, Northern Italy)

M. Marchesini[a], *S. Marvelli*[b], *I. Gobbo*[b] *and E. Rizzoli*[b]

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[b]Laboratorio di Palinologia e Archeobotanica - C.A.A. Giorgio Nicoli, San Giovanni in Persiceto (BO), Italy

The site of Le Mose is located south-east of Piacenza in an area which is today occupied by a warehouse. Between 1998 and 2003 a series of early Mesolithic (Sauveterrian) lithic scatters were identified and excavated under the scientific direction of M. Bernabò Brea from the Soprintendenza per i Beni Acheologici dell'Emilia Romagna. The environment was characterised by widespread forests (45.2%) alternated to open areas which were settled by human groups. During this phase conifers decrease (11.6%) corresponding to an increase of deciduous broadleaves – and particularly Oakwood (18.4%). The latter include the following species: *Quercus caducifolia* (*Q. robur*, *Q. pubescens*, *Q. petraea*, *Q. cerris*), *Acer*, *Cornus mas*, *Carpinus betulus*, *Ostrya carpinifolia/Carpinus orientalis*, *Fraxinus* (*F. excelsior*, *F. ornus*), *Tilia* (*Tilia cordata*, *Tilia platyphyllos*) and *Ulmus*. Herbaceous plants (55%) represent the most diffused group and they are dominated by humid grass species. The forests surrounding the areas settled by human groups were very important not only for wood provisioning but also for the presence of many edible spontaneous fruits. Although Spontaneous Anthropic Marker species are present with low percentages, it is possible to detect an increase of human presence in the area. The curve of micro-charcoals reaches high levels, attesting the occurrence of frequent fires both at a local and a regional scale.

Session B - Settlement dynamics

Presentations

Settlement and mobility patterns. The Sauveterrian site of Staller Sattel (Antholz, South Tyrol, Italy)

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[d]CORA società archeologica srl, Trento, Italy

Surveys conducted in the surroundings of the Staller Sattel, a pass that connects the Italian Antholz/Anterselva Valley and the Austrian Defereggen Valley, led to the discovery of several Mesolithic open-air sites. Their distribution and their geomorphological and topographical features allow to suggest an early Holocene route system in the area.

One of the loci, STS 4A, discovered in 2006, is under investigation since 2009, in the framework of a larger research project. The site lies on a terrace at 2.125 m a.s.l. The stratigraphic sequence, dated between 8480 – 8260 cal. BC and 7090 - 6680 cal. BC, develops on an alluvial ice-contact deposit and consists of three distinct pedogenic cycles. The Mesolithic occupation occurred in correspondence with the formation of a podzolic forest soil. Until now the site has been excavated over an area of about $10m^2$. Charcoal concentrations as well as structural elements have been documented. These evidences, together with the spatial distribution of the lithic artefacts, give an idea about possible activity areas in the site. The lithic industry, made mostly from rock crystal and to a limited percentage from chert, consists mainly of small waste from *débitage*. The techno-typological features of the assemblage are in line with the characters of the Sauveterrian techno-complex.

New data on the first human settlements in Western Trentino. The site of Pozza Lavino in the Ledro valley (Trentino-Italy)

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The Ledro Valley, best-known for the Bronze Age pile-dwelling village discovered on the northern shore of Lake Ledro, was surveyed in 2011 to check for the presence of other archaeological sites of prehistoric age. One of the most interesting sites discovered is that of Pozza Lavino, located on the Monte Tremalzo mountain pass, at 1790 m a.s.l. Two research campaigns carried out in 2012 and 2013 yielded several lithic artefacts dating to the Early and Late Mesolithic periods, alongside scattered pottery fragments that suggest a more recent occupation.

The site testifies to a Mesolithic occupation in the western Trentino region. This could be linked to the finds from the Brescia pre-Alps, following a hypothetical route connecting to the known sites of the Po valley. This suggested route toward the inner Alps is an alternative to the already well-known ones: the Veneto pre-Alps and the Adige valley. The watershed position of the settlement sheds new light on the behaviour and settlement strategies of our prehistoric ancestors in the mountains of Western Trentino.

First signs of Mesolithic occupation in "Alta Val Sessera" (Bi)

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Val Sessera is an underpopulated alpine valley located in the north-eastern Piedmont between the provinces of Biella and Vercelli. We expose here the data obtained during the first year of the project "*Survey Alta Val Sessera*" held in 2013 under the scientific direction of *Soprintendenza per i Beni Archeologici del Piemonte* in collaboration with *Associazione Culturale "3P"* and *DocBi* that had as its purpose the identification of Mesolithic frequentations in the valley.

The interpretative model employed starts from the one developed for Trentino and the South Tyrolean region by Broglio and Improta. During the campaign surveys have been carried out in the valleys of the creeks Sessera and Dolca using the settlement and mobility patterns described for the alpine environment by K. and N.M. Kompatscher to identify the most interesting areas.

Preliminary results indicate that the valley of the Sessera creek has been occupied by human groups using knapped lithic industries while similar findings were not detected in the valley of the Dolca creek. The activities carried on led to the identification of nine sites characterized by the presence of lithic industries made of local quartz. These frequentations should be placed chronologically after the LGM. Though the technological study suggests their Mesolithic dating no diagnostic elements are available for a more precise chronological attribution of the findings. Next summer a second survey campaign will take place with the purpose of implementing the data collected.

Data will then be compared with those coming from the sites of the other alpine regions with the aim to obtain a more complete picture of the Mesolithic occupation of this Alpine environment.

The Sauveterrian of the Emilian Po plain: intra-site spatial organization face to face

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The Sauveterrian occupation of the southern Po plain is known thanks to the discovery of five sites. Three of them are located near Bologna (INFS, Casalecchio and Cava Due Portoni), one in the Parma district (Collecchio) and the last one in the area of Piacenza (Le Mose). Although they have been excavated some time ago, between the '80s and '90s, the spatial position of the artefacts has been recorded for all of them except from Le Mose site. This has allowed an intra-site spatial analysis to be carried out. For this analysis only open source softwares have been used, namely Quantum GIS and Gvsig.

In this paper authors will compare and contrast the spatial organization of the sites highlighting common features and differences. By defining a hierarchy between them the aim of the study is a critical re-examination of the sites in order to better understand their role within the settlement system that characterizes the southern Po plain area during the Early Mesolithic.

New insights into Capsian Culture (Epipalaeolithic): First results from Medjez I excavation (Sétif, Algeria)

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Medjez I is one of the famous *escargotières* of El Eulma Region situated in North-Eastern Algeria, on the Setifian Plateau. This site is known by the discovery of a human burial excavated in 1960 and has revealed a Capsian occupation in spite of the poor sample of archaeological artifacts.

In this paper we present the first results of an excavation conducted by the CNRPAH in June 2013. This excavation has yielded a rich archaeological material such as lithic and bone industries, human and faunal remains, as well as an exceptional engraved stone plaque. The archaeological remains have been found in several occupation layers and associated to dwelling structures. The first results of this pluridisciplinary investigation provide important insights into economic and cultural behaviors of the last hunter-gatherers in the Maghreb.

Posters

Excavations at the high altitude Mesolithic site of Pian de La Lóra (Val Civetta – Venetian Dolomites). New data on the last hunter-gatherers of northern Italy

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The poster shows the preliminary results of the excavation of Pian de La Lóra, an open-air Mesolithic station located at 1930 m a.s.l. in the western fringe of the Civetta Group (Venetian Dolomites). This first investigation entailed the opening of a 12 square meters trench on a small moraine surrounded by boulders, springs, marshes and a seasonal basin, a location where previous surveys had recognized superficial concentrations of flint elements. The illustrated data are supported by an overview on the criteria applied in the field research, which showed no evidence of vertical stratigraphy and involved systematic wet sieving of the archaeological deposit. Excavations led to the discovery of an uncommon lithic assemblage, whose richness and variety goes far beyond expectations. It includes more than a thousand unretouched micro- and hypermicrolithic artefacts, most of which partially or totally burnt, a few poliedric and prismatic exhausted cores, tools like end-scrapers, burins, truncations and many retouched or notched blades, along with several microlithic armatures like asimmetrical trapezes and rarer triangles, segments, backed bladelets or backed points. Moreover, almost a hundred microburins were found, indicating a local production of the trapezoidal arrowheads. When determinable, the most represented raw material is flint from the southern Prealpine belt or the Piave alluvial plain. As showed, the applied methodology also brought to light a rare small fire pit structure, whose charcoals were fully sampled for radiocarbon dating and further palaeoenvironmental studies. The typological and technological analysis of the flint assemblage allows the author to clearly identify a Late Mesolithic high-altitude hunting station, whose ephemeral occupation fosters new reflections on strategies, social relationships and mobility of the last hunter-gatherers of Northern Italy. These studies are still in progress.

Looking for the Mesolithic in the Venetian Po Plain: first results from the Sile river springs area (North-Eastern Italy)

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Thanks to the work of a few local amateurs thousands of artefacts have been collected during the '80s in the area of the springs of the Sile river, a few tens kilometres west of Treviso (Veneto, North-Eastern Italy). Starting from 2012 a new research program coordinated by the University of Ferrara in collaboration with the University of Padova and Musei Civici S. Caterina of Treviso in convention with Soprintendenza per i Beni Archeologici del Veneto has been undertaken. One of the main aims is the systematic collection of the rich lithic scatters which still come to light from plough fields on a wide area and represent the richest and most extensive concentration of Mesolithic sites so far known in the Italian peninsula. At the same time a series of trenches are being dug in order to investigate the possible presence of undamaged deposits. The geomorphological evolution of the area is being investigated through remote sensing, DTM analysis, and drilling of boreholes, with the aim of defining the palaeoenvironmental setting.

Data obtained indicate an intense occupation of the Sile spring river banks by the Mesolithic groups during the ancient and middle Holocene in connection to the presence of rich biotopes suitable for subsistence.

Grotta del Santuario della Madonna at Praia a Mare (Cosenza): new excavations and chronological data of the Mesolithic levels

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The cave (ca. 40 x 50 m and with a 15 m high vault) opens on a cliff at about 500 m from the modern coastline. The excavations carried out by the Istituto Italiano di Paleontologia Umana of Rome (1959-1967) highlighted an impressive archaeological deposit, over 8 m thick, that evidences human frequentation of the cave from the Upper Palaeolithic to the Middle Ages passing through the Mesolithic, Middle and Upper Neolithic, Eneolithic, and Bronze Age.

Since 2002 the Soprintendenza al Museo Nazionale Preistorico Etnografico L. Pigorini carried out new excavations adjacent to the old trench. Such new excavations (test trench 4 x 5 m) involved the upper and the middle layers of the stratigraphic sequence, corresponding to about 5.5 m of anthropic deposit of the Holocene period down to the Mesolithic frequentation.

The new excavations confirm the absence of human frequentation during the Impressed Ware Early Neolithic, because the Middle Neolithic levels are in contact with the underlying Mesolithic ones. The evidences of the latest Mesolithic frequentations have been heavily disturbed by the installation of Neolithic structures (pits and post holes with rare pottery and domestic fauna remains). The underlying Mesolithic layers, without Neolithic disturbances, are characterized, in the investigated area, by the presence of well-organized fire structures, a shell midden, a lithic industry with very rare backed tools and bone remains of wild mammals (mainly wild boar and red deer), tortoises and abundant malacofauna, mostly limpets and sea snails.

The new dates, obtained by the CEDAD, Università del Salento of Lecce, frame the upper Mesolithic levels between 6240 and 6420 BC, the middle ones between 7040 and 7310 and the lower ones with the hearths and the shell midden between 7830 and 8430 BC.

Grotta del Santuario della Madonna at Praia a Mare (Cosenza): spatial organization, fauna and lithic industries of the Mesolithic levels (2008-2011 excavations)

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The most recent levels of the Mesolithic occupation appear to be partially disturbed by the installation of Middle Neolithic structures. The presence of pits and post holes appears less evident starting from SU 548 (C14: 6420-6240 cal. BC) and disappears in the underlying SU 582. This latter SU is characterized by the presence of a complex depressed combustion structure and a series of small sized post holes close to it, as well as by lithic implements and remains of wild fauna. The combustion structures continue in the underlying levels (SU 614, 628). One hearth (SU 637, ca. 7200 cal. BC) is deeply depressed, it has an oval shape in the upper part and a round one in the lower part and contained remains of red deer, roe deer, wild boar, and a complete distal limb of a badger. Another hearth consists of a central circular part (SU 641), made of two superimposed levels of stones with abundant charcoal and burned bones. Around the hearth there is a well-defined carbon charcoal area (SU 657, ca. 7900-8400 cal. BC), a real shell midden, rich in particular of malacofauna (terrestrial and marine) as well as fragments of carapace, plastron and bones of tortoises, some of which still in anatomical connection.

Preliminary data on the lithic production show that the lithic assemblages are mainly made from local raw materials, flint and radiolarites, collected in secondary deposits (marine beaches and river beds) in the surroundings of the site in the form of pebbles of variable size. The data confirm the presence of an Early Mesolithic assemblage with low technical investment. Pebble exploitation is aimed at the production of crude and non-standardized flakes by direct percussion for making common tools such as scrapers and denticulates. The microlithic component is very low. Its features are similar to those of other early Holocene industries from Central and Southern Italy, Sicily and Sardinia, dated between the 10th and 9th millennium BP, called Undifferentiated Epipalaeolithic.

Keynote

The geoarchaeological project Ullafelsen (Tyrol, Austria)

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The Mesolithic site Ullafelsen is located in the Fotscher valley at subalpine level in the Stubai Alps (Tyrol, Austria) and has been investigated across disciplines. Its natural geographical location is characterized by favourable climatic and geomorphological conditions. Abundant sources of water and the diversity of the surrounding landscape have attracted people repeatedly in prehistoric times. Our research focuses on the combination of landscape, historical and archaeological issues. These include aspects of climate change deduced from glacier, soil and vegetation developments, the role of geomorphology, occurrence and use of natural resources (rocks for tool making, minerals, timber, etc.) by the people of that time, etc. In the middle of the Preboreral the first groups of hunters reached the valley. During this time the Ullafelsen was still above the tree line and offered a good view of the surroundings. With increasing forest cover around this advantageous outlook, the strategic advantage of Ullafelsen for the Mesolithic groups of hunters was lost. In the first half of the Boreal they settled the Ullafelsen only sporadically and started hunting at higher grounds in neighbouring valleys.

The primary outcrops of the used raw materials for producing artefacts could be identified in the southern Franconian Alb of Bavaria (ca. 200 km NNE), in the Northern Limestone Alps (eastern Karwendel/Rofan mountains, ca. 50 km ENE), in northern Italy (Val di Non, Trentino, ca. 150 km S) and in other locations. They supply important evidence about the seasonal wanderings and hunting areas of our Mesolithic settlers. Some differences between the Ullafelsen lithic tools point to different lithic traditions in the making of hunting weapons between people living north and those living south of the Alps. In addition, there was evidence of many typical camp site activities in the form of tools like scrapers, burins, borers etc. for leather/hide, wood and bone working. Many of those lithic tools were shafted for better handling and fixed with the help of birch tar which was produced at Ullafelsen site, too.

Session C - Subsistence strategies

Presentations

Mesolithic coastal exploitation in NW Sicily: a new insight from Grotta d'Oriente and Cala Mancina

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The Mediterranean Sea has one of the most nutrient-poor surface waters in the world, which is thought to have imposed ecological limits to the exploitation of marine organisms by hunter-gatherers. Nevertheless, recent archaeological excavations at Grotta d'Oriente (Favignana Island, Trapani) and Cala Mancina (San Vito lo Capo, Trapani) have provided new archaeozoological evidence of fishing and shellfish harvesting during the Mesolithic, offering a novel insight into the role of marine resources and their effects on the human groups of NW Sicily at the beginning of the Holocene. Both sites contain well-determined stratigraphical sequences, including several Mesolithic palaeosurfaces. The radiometric chronology shows that both caves were inhabited about the same period during the Mesolithic. Here we present the results of an integrated study, including the fish and terrestrial fauna as well as the mollusc remains, and discuss the implications of coastal exploitation to Mesolithic subsistence strategies in Sicily and Southern Italy.

Late Epigravettian and Mesolithic foragers of the Julian Prealps. Hunting strategies and ornamental traditions at Riparo Biarzo (UD)

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The shelter is located in North-eastern Italy, at 160 m a.s.l., on an alluvial terrace on the left bank of the Natisone River in the Julian Prealps. The site was excavated from 1982 to 1984 by F. Bressan and A. Guerreschi (Univ. of Ferrara) in collaboration with the Museo Friulano di Storia Naturale (UD).

The stratigraphy documents a Late Epigravettian occupation of the site (US5 - 11.100 ± 125 ^{14}C BP uncal.) followed by Early and Late Mesolithic (US3a and 3b) phases and, at the top of the sequence, a Neolithic frequentation (US2).

The authors discuss the results of the analysis of faunal remains as well as the rich ensemble of ornaments recovered in the Late Epigravettian and Mesolithic layers of the site. The strategic location of the shelter at the bottom of two slopes in proximity of the Natisone River, favoured the abundance of wild boar. This ungulate represents the most numerous animal hunted both during the Late Pleistocene and the Early Holocene occupations. The abundant remains of wild boar make hunting strategies at Biarzo unique with regards to other contemporaneous contexts in the North-eastern Prealps and Alps.

Technological features characterizing hunter-gatherer system of ornamentation at Biarzo, based on the use of different type of marine and freshwater gastropods, reveal exchange networks, mobility strategies and connectivity between the eastern Alpine and the north Adriatic regions during the Late Epigravettian and throughout the Mesolithic.

Red deer vs. ibex hunting at a seasonal base camp in the Dolomites: Mondeval de Sora, site 1, sectors I and III

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Mondeval de Sora (VF1) is a high-altitude camp-site located in the heart of the Dolomites (2150 m a.s.l., south eastern Alps, Italy). It has yielded two stratigraphic series which were explored under two opposite sides of the same erratic boulder (Sectors I and III). Thanks to its exceptional preservation, it represents a key-deposit for the study of human settlement and subsistence strategies in Alpine highland areas.

In this paper results of archaeozoological analyses carried out on the osteological remains of the Sauveterrian (early Mesolithic) levels of sectors I and III will be presented. The faunal assemblages are characterized by a high variety of species which differ in their composition: in sector I the most represented species are red deer and ibex followed by chamois and roe deer, which are present in moderate proportions; in sector III the presence of wild caprines appears more important. Wild boar is scarce and carnivores (bear, wolf and fox) and rodents (marmot and hare) are rare in both sectors. The taphonomical analysis of faunal remains has highlighted that the processing of animal carcasses, particularly of red deer and ibex, was mostly carried out in the site. Hunting of these two species was favored by the strategic location of Mondeval de Sora at the transition zone between the forest and the Alpine prairie.

Seasonal dating of fish and macrofaunal remains from the early Mesolithic site Galgenbühel/Dos de la Forca (South Tyrol, Italy)

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The paper presents the seasonality data of the early Mesolithic site Galgenbühel/Dos de la Forca. Located in valley bottom of the Etsch/Adige river in South Tyrol (Italy), the rockshelter was repeatedly frequented by Sauveterrian hunter-gatherer-fisher groups from the mid-9th to the mid-8th millennium BC cal. Abundant fish remains of the Pike and different species of the *Cyprinidae* attest fishing in standing and slow flowing waters. A specialization in Pike fishing occurs during the younger phases of the stratigraphic sequence. Hunting activity was directed towards ungulates, mainly of forest environment as Wild boar, Red deer and Chamois, wetland species as the Beaver and the Otter and small carnivores.

The analysis of the fish fauna aimed at establishing the time of death of the individuals is based on the reading of the incremental growth structures of the hard tissue of certain body parts. Two early spawining species turned out to be sufficiently reliable for the seasonal dating: the Pike (*Esox* sp.), and the Rudd (*Scardinius erythrophtalmus*). This method is not free of problematic aspects which are discussed. Seasonality data of the macrofaunal remains refer to tooth eruption and tooth shedding in dentally immature individuals and on the fusion of the epiphyses of Wild boar and Beaver. The general results indicate that the early Mesolithic frequentation of the Galgenbühel occurred mainly during the warm season. In the context of the wider territory represented by the Adige basin including the mountain territories the results give a more complex picture of the territorial frequentation of the mobile groups during the summer months.

The work is part of the research project "Living near the water" financed by the Higher Education Support, University and Research Office of the Autonomous Province of Bolzano and headed by the South Tyrol Museum of Archaeology in cooperation with the Ufficio Beni Archeologici of Bolzano.

Posters

The Mesolithic occupation at the site of Isolidda (San Vito lo Capo), Sicily: new data

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'Gruppo dell'Isolidda' is a complex of five caves along a rocky cliff on the eastern side of the promontory of San Vito Lo Capo (Trapani). The first exploration of these sites took place in the 1920s, when Raymond Vaufrey found Upper Palaeolithic industries at Grotta Racchio. In the early 1960s, Giovanni Mannino discovered rock art in this same cave. A research team from the University of Florence excavated a trench of around 8 square meters in the slope below the cave complex in 2004 and revealed a stratified deposit in secondary position, containing a Late Epigravettian lithic assemblage overlain by levels with Mesolithic industries. Early Mesolithic industries, characterized by backed microlithic tools, were distributed in two contiguous layers, the lowest of which also contained Epigravettian tools, probably due to sediment reworking. A third level, above the previous ones, might be Early Neolithic. Faunal remains from the site represent mainly food refuse and include abundant shells of intertidal molluscs (*Phorcus turbinatus* and *Patella* spp.), along with few bones of terrestrial herbivores. Oxygen isotope analyses on shell carbonates of *O. turbinatus* show that, around 9500-9000 cal. years BP, marine molluscs were exploited year-round, albeit more often in autumn and winter. Marine molluscs were also used for ornamental purposes, as attested by several shells of *Columbella rustica* that had been perforated or in one case incised with sub-parallel groove decorations.

The raptors of Grotta del Santuario della Madonna di Praia a Mare (Cosenza, Italy)

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Grotta del Santuario della Madonna di Praia a Mare, located in Northern Calabria, was continuously occupied from the Upper Palaeolithic until the Late Roman Period. Over 1,200 bird bones belonging to 50 species were found in Mesolithic level I (47 – 42; non-calibrated 14C 9000 - 8700 BP). The rock species are prevalent, mainly due to the high frequency of the rock dove *Columba livia*. The Gruiformes and Passeriformes are also well represented. The proximity of a large delta permits the capture of different aquatic birds, in particular the Eurasian Coot (*Fulica atra*) and many species of Anseriformes, the mallard (*Anas platyrhynchos*) predominate among them.

The analysis of water bird bone remains reveals many anthropic marks (cuts, impacts, scrapings and localized burnings) which suggests that these birds were exploited for human consumption.

Anthropic marks were also identified on long bones of birds of prey species. Given this evidence, were birds of prey included in the diet of Mesolithic hunter-gatherers?

Taphonomic analyses carried out on the bones of 10 Mesolithic species of diurnal and nocturnal birds of prey, in addition to predatory bird species found in the Upper Paleolithic levels of the cave provide the necessary information to answer this question.

The Mesolithic occupation at Grotta della Cala (Marina di Camerota – Salerno – Italy)

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The Holocenic human occupation of Grotta della Cala is attested only within the so-named "internal series" (and not in the "Atrio series") and starts with Mesolithic layer 7, dating back to the window of time between 7579 and 6687 (cal BC). This layer, which was excavated by P. Gambassini in 2004, is possibly the same as stratum F investigated by Palma di Cesnola in the sixties, and is directly superimposed onto stalagmite α sealing the Pleistocenic stratigraphical sequence.

Layer 7 produced a lot of large ungulate remains. It also yielded a lot of malacofauna, both of the terrestrial and, above all, marine types, as well as a number of chipped stone artefacts, a painted pebble, and a grindstone used for ochre processing. Outcomes from archaeozoological, malacological and anthracological studies have provided a detailed framework of the surrounding landscape and of subsistence strategies adopted by Mesolithic groups at Grotta della Cala.

Exploitation of Mesolithic faunal resources at Riparo Gaban (Trento): preliminary results of taphonomical analyses

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The Gaban rockshelter is located at 270 m a.s.l., near Trento, in a narrow and sheltered lateral valley of a tributary of the Adige river. The site is well known for the Neolithic occupations which have allowed the recognition of the Gaban group, the early Neolithic pottery type for the Trento area. It also is famous for its mobile art repertoire made on bone, antler and stone. The stratigraphy is composed also by Mesolithic deposits referable to several Sauveterrian and Castelnovian occupations. The Mesolithic faunal assemblages are characterized by a high degree of fragmentation due to intentional bone fracturing. The faunal remains belong mostly to ungulates: red deer and roe deer are the most common species followed by wild boar, ibex and chamois. Small game mammals and carnivores are poorly attested in all layers. In this study, preliminary taphonomical data of the Mesolithic faunal assemblages will be presented in order to identify modifications related to the exploitation of animal carcasses.

Palaeodiet of Mesolithic hunter-gatherers in north-eastern Italy: evidence from the burials of Vatte di Zambana (TN), Mezzocorona (TN) and Mondeval de Sora (BL)

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This study discusses the first stable isotopic data ($\delta^{13}C$ and $\delta^{15}N$) obtained on human (n=3) and faunal remains (n=9) from three Mesolithic sites in north-eastern Italy. It thus aims at contributing to the reconstruction of human diet and understanding the potential relationship between foodstuff consumption, landscape use and mobility.

Vatte di Zambana and Mezzocorona (Trento) are two camp-sites situated in the Adige Valley. The two burials discovered in these sites are dated to the end of the Boreal period. They both contain an adult female skeleton with no grave goods, except from a few small pieces of red ochre. Mondeval de Sora (Belluno) is a high altitude hunting-camp located under the overhang of a large erratic boulder on a terrace at 2100 m above sea level. An adult male accompanied by a rich grave goods assemblage was buried at the beginning of the Atlantic period.

Results obtained from the three individuals indicate different dietary patterns: the two women derived most proteins from ungulates while the man's values indicate the consumption of both terrestrial and freshwater resources. In spite of the reduced sample different hypotheses for the interpretation of these data are advanced.

Session D - Lithic, bone & other technologies

Presentations

Technocomplexes et cultural affiliations of Mesolithic groups, what gives the bone and antler industry?

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As proposed in Meso 2000 Lausanne, and for what concerns the Boreal phase, no significant characterization between the Sauveterrian and the Beuronian could be emphasised by means of morpho-technological studies on bone and antler worked material. To the contrary, and as recently suggested by other investigations made on similar assemblages of south-western Germany, close relationship are further highlighted between various sites of central Europe, leading to identify distinct human groups located in the border-zone regions of the northern Alps.

How to make and to use a bone spatula. The case of the Mesolithic site of Galgenbühel/Dos de la Forca (Salurn/Salorno, BZ-Italy)

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The Early Mesolithic rock shelter site Galgenbühel/Dos de la Forca is located in the middle Adige Valley at Salurn/Salorno (South Tyrol - Northern Italy). It was dwelled by Sauveterrian hunter-gatherer-fisher-communities from the mid IX to the mid VIII millennium BC (cal.). Several evidences testify a subsistence economy based on the exploitation of the wetland in the valley bottom.

The site has recently been object of the interdisciplinary research project "Living near the water", headed by the South Tyrol Museum of Archaeology and supported by the Higher Education Support, University and Research Office of the Autonomous Province of Bolzano.

The bone industry recovered at the site is not abundant, but very well preserved. Analyses conducted on a bone spatula (made on a red deer metatarsus) recovered at the site are presented in this paper. The tool manufacturing process as well as its function have been investigated through the examination of the macro and micro wear traces detected on its surface and by experimental activities regarding fish processing, working of vegetal fibres and beading fish heads before hanging them to dry.

The First Mesolithic in the Alps: new data from the rockshelter of La Grande Rivoire (Vercors, Isère, France)

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Discovered in 1986, La Grande Rivoire is a rockshelter located in the north of the prealpine mountain range of Vercors (Northern French Alps). It lies at 580 m a.s.l., on the west side of the Furon valley, at the foot of a cliff. The six meters stratigraphy reveals a continuous chrono-cultural sequence starting from the First Mesolithic to the Gallo-Roman period. The present communication aims at characterizing the earliest occupation of the site attributed to the First Mesolithic (ca 8500 - 7000 cal. BC). The new multidisciplinary data gathered are intended to contribute to the understanding of the regional chrono-cultural evolution.

The deposits are constituted of very rich organic matters, possibly resulting from the degradation and combustion of plant litters. Their natural and/or anthropogenic origin still remains unclear. The excellent state of preservation of the faunal remains (superficially covered by an ashy encrustation) and the bone refittings would indicate a low post-depositional impact on the faunal material in this sector. The highly intentionally fragmented long bone remains evidence an - intensive? - carcass exploitation of various large game species, among which red deer seems to predominate. Plant remains analysis gives also information on wild gathered products, especially hazelnuts.

Osseous material industry is dominated by waste products occurring from sectioning action of red deer antler by notching. Few

examples of bone and tooth working highlight the use of removal by diffuse percussion during shaping.

Preliminary observations conducted on the lithic assemblages show that domestic tools are mostly manufactured on local raw materials of poor quality. Exogenous raw materials of better quality are mainly used for the fabrication of microliths using the microburin technique; the latter tending to disappear at the end of the sequence. Use-wear analysis on arrowheads shows that triangles are present throughout the sequence and always hafted as barbs while Sauveterre points and crescents are only present in the oldest *decapages*.

Flint provisioning and exploitation during the Sauveterrian on the Cansiglio plateau. The Casera Lissandri 17 site

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The site of Casera Lissandri 17, located on the Piancansiglio western slope at 1073 m a.s.l., has been discovered in 1998 during a systematic archaeological and geoarchaeological survey. Between 1999 and 2002 the excavation of the site brought to light more than 2500 lithic artefacts (longer than 2 cm) that represent the core of the work here presented. The available radiocarbon date (9410±50 BP, Poz-9919, 8808-8562 cal BC, 2σ, IntCa13) in accordance with the typological attribution, sets the site in the early Mesolithic phase (Sauveterrian).

The lithic industry of the site has recently been studied from a techno-economical and typological point of view. In particular these studies have allowed lithic raw materials exploitation strategies to be reconstructed starting with the identification of a wide spectrum of lithologies — both local and extra-regional — and of the reduction schemes adopted.

The Casera Lissandri 17 site, in accordance with its overall composition dominated by microlithic arrowheads, should be considered as a seasonal camp dedicated to hunting activities and to the processing of animal tissues. Moreover its position at mid altitude compared to the Sauveterrian Dolomitic sites, and at the southern margin of the Alpine chain testifies the importance of the site in the reconstruction of human peopling strategies during Early Holocene in North-Eastern Italy.

Mesolithic frequentation at Cividate Camuno - Via Palazzo (Brescia)

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Researches carried out between 1987 and 1995 during the restoration of a Roman domus in Via Palazzo, in the old town center of Cividate Camuno, in Valle Camonica (Brescia), detected the presence of underlying prehistoric levels dating back to the Upper Palaeolithic, Early Mesolithic, Middle-Late Neolithic and Bell Beaker culture. Authors show the results of the techno-typological study of the Sauveterrian lithic assemblage (SU 282), associated with poor faunal remains.

Mesolithic in Central-Southern Italy: an overview on lithic productions

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Basing on the already well-known record and on recent findings, the Authors summarize the Mesolithic stone production in the Center-South of the peninsula and the main islands. In the Early Mesolithic (X-IX mill. uncal. BP) lithic industries reveal the presence of regional facies, with peculiar techno-typological characters, which are related to the already locally existing differentiation at the end of the Epigravettian. On the basis of the chronological and stratigraphical record the lithic assemblages appear at least partly contemporary. Two of these, the Sauveterrian and the Undifferentiated Epipalaeolithic, have a wider spread and involve both the peninsular region and the islands. Regarding the Sauveterrian, variability and originality of the Southern Armature Complexes seems to be in relation with the progressive distance from the Northern areas. In Southern Apulia appears the so-called Epiromanellian, coeval to the spread of the Sauveterrian.

In Sicily the situation is more intricate. During the Early Holocene an Epigravettian-tradition facies with unilateral backed tools and geometrics is attested on the island together with Sauveterrian-like industries and the Undifferentiated Epipalaeolithic. In Corsica-Sardinia only the Undifferentiated facies is documented. In the VIII mill. uncal. BP, trapeze-complexes are diffused in Southern Italy and Sicily. For this facies, testified by few evidence, the southwards spread corresponds to a depletion of transalpine characters and involves the formation of local aspects which however have the specific Castelnovian techno-typological characters.

The Mesolithic at Mura Cave (Monopoli, Italy)

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The cave is located along the shoreline of the southern part in the suburban area of Monopoli (Bari). The site was first discovered in 1952 by Prof. Anelli, and since 1985 the research is led by University of Siena. The archaeological excavation is focused on an area of 21 square meters and the stratigraphic sequence ranges from Musterian to ancient Neolithic.

This project aim is to analyze the Mesolithic phase (layer 2), which is included between two layers, one is related to the final Epigravettian and the other one is connected to a final ancient Neolithic. The Mesolithic layer is 60 cm thick, and it is rich in lithic and palaeoenvironmental features. Malacological and faunal analysis showed that there is a tendency to a bland and humid climate, probably related to the Boreal phase. In the same layer some mobiliar art findings on pebble and bones were found. The lithic industry is of copious amount and is made up of 5000 unretouched artifacts, 1100 retouched tools and 22 cores. The lithic technology is typically sauveterrian, essentially structured on prismatic and discoidal cores. The typological analyses describe a Sauveterrian structure mixed to some Epigravettian local features. The general composition of the lithic assemblage seems to refer to a peculiar function of the site itself, like other Mesolithic contexts within the Italian area.

The goal of this research, based on technological and typological lithic analysis, intends to understand some cultural aspects which characterized the Mesolithic period in the southern part of the peninsula and the relationship between the local Epigravettian context and the Sauveterrian culture.

The lithic industry of the Uzzo Cave (Trapani, Sicily) and the issue of the *chaînes opératoires* and the lithic traditions of the Recent Mesolithic and the Early Neolithic in Southern Italy

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Uzzo Cave, located in the eastern side of San Vito lo Capo promontory (Trapani, Sicily), is one of the most important sites for the understanding of the Mesolithic-Neolithic transition process not only in Southern Italy, but also in the Western Mediterranean Basin. A long sequence of archaeological levels attests human presence during the final phases of the Upper Palaeolithic, the Mesolithic and the Neolithic periods. The technological data derived from the analysis of the lithic industry of the Late Mesolithic and Neolithic levels of Uzzo Cave are set in a landscape perspective of management and control of raw material sources, both in primary and secondary position. The purpose is to identify a management model of both technical behaviours and technological strategies. These last are intended as the combination of all the activities carried out since the acquisition of raw material until the abandonment of lithic products considering the effect produced by the same activities in terms of landscape behaviours, raw materials availability and acquisition modalities.

Starting from the analysis of Uzzo cave lithic assemblages, the main target of this paper is to put forward a technological analysis of the industries of the Late Mesolithic and Early Neolithic concerned in the process of neolithisation in Southern Italy. The aims of this research are to highlight the methods and the techniques of *débitage* and to identify the *chaînes opératoires* set up by the early groups of farmers in the South of Italy and in Sicily. Is it possible to recognize a techno-economic variability in the *débitage* systems of the Early Neolithic of Southern Italy? Is it possible to give a cultural value to the variability of technical facts? What is the rate of continuity and discontinuity among groups of hunters-gatherers and the first farming societies? These questions allowed to shed light on the whole of technical and cultural transformations between the seventh and sixth millennium B.C. in Southern of Italy.

Posters

Insights into the Late Mesolithic toolkit: use-wear analysis of the notched blades, case-studies from the Iberian Peninsula

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During the last decades we gain a considerable amount of new data about the Mesolithic toolkit in the Western Mediterranean. A large set of instruments probably existed for a variety of purposes: foraging practices (both hunting and fishing), food processing, crafting activities, etc. Expedient, disposable tools, scarcely elaborated, coexisted with formal and more complex instruments, often composed of multiple parts and realized on a variety of materials (e.g. stone, shell or bone inserts; bone or wood hafts, etc.). In this paper we will consider one particular type of tool that appears in the Western Mediterranean starting from the VII-VI millennium cal BC: the notched or denticulated blades. We will consider materials proceedings from five different Late Mesolithic contexts: the Cocina Cave, the Abric de la Falaguera and Vallmayor in the NE of the Peninsula, Artusia rock-shelters in Navarre and Atxoste and Mendandia rock-shelters in the Basque country. The results of our analysis indicate that all the studied materials are characterized by some common traits, both on a technological and functional level. Notches are often shaped through bending fractures, even if some elements are shaped through abrupt retouch. Also the cinematic of the tool appears almost identical in all the observed implements,

while the major variability is observed among the worked materials. The notches appear to be used for scraping a variety of materials, from soft vegetal and animal substances, to woody plants or hard-animal material such as bone and antler. Even if data is still too scarce to draw definitive conclusions, we cannot exclude that notched blades represented a particular category of artifact, a crafting tool employable to scrape a variety of materials. However, interpretative problems (the overlaps between use-wear traces) and taphonomic alterations still represent a problem to overcome.

Use-wear analysis of a Castelnovian blade and trapeze assemblage: the Mourre de Sève rock shelter (Sorgues-Vaucluse)

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This research concerns the characterization of economy of a Mesolithic settlement in the South of France. The Mourre de Sève site is a rock shelter located not far from the confluence of Rhône-Ouvèze and it represents the exploitation of a riverine environment by hunter-gatherers. The latest excavations, in 1994 and 1997, dated the site using AMS to the Sauveterrian and the Castelnovian periods. The Castelnovian lithic industry from the top levels of the site constitutes one of the few blade and trapeze complexes of the region between the Alps and the Pyrenees. In this poster we discuss the results of use-wear analysis carried on the lithic artefacts from the recent excavations. The results of this analysis are linked to multidisciplinary studies of the archaeological material to characterize the economy of the site. The findings suggest continuity in economy type from the Sauveterrian to the Castelnovian occupations.

Alpine raw materials and the production and use of scrapers at the Swiss Late Mesolithic site of Arconciel/La Souche

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Due to their abundance, scrapers can be regarded as the typifying tool category of the site of Arconciel/La Souche, a rock shelter with a well stratified, multi-phased Late Mesolithic occupation (7000 - 5000 cal BC).

The site is located in the Sarine valley, on the edge of the Swiss Plateau at the foot of the Prealps. Much of the lithic assemblage is produced on raw material which originates from these nearby Prealps. The remainder of the artefacts are made from raw material brought here from further afield, e.g. the Jura mountains, the Geneva region and eastern France.

A large majority of the tools found at Arconciel/La Souche are scrapers (46% of the tool assemblage). *Chaînes opératoires* studies and microscopic use wear analysis are combined to investigate how the variety of local and non-local raw material relates to the production and use of the scrapers. As well as determining whether tool use might have varied according to raw material, these studies raise questions relating to the possibility of foreign techniques being imported along with the raw material. This will not only aid the interpretation of one of the most important Mesolithic sites in Switzerland, it might also provide insights into the developments at the end of the Mesolithic on the northern edge of the Swiss Alps.

Mesolithic findings from the area of the engraved boulders at Cemmo (Lombardia)

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In the area of the famous engraved boulders of Cemmo (Capo di Ponte, Brescia) recent researches carried out by the Soprintendenza per i Beni Archeologici della Lombardia revealed strips of anthropogenic deposit on which the engraved boulders themselves stand. The cultural sequence of the investigated archaeological deposits extends from the Early Mesolithic to the Copper Age. Among the lithic materials a Mesolithic production has been identified. Mesolithic artifacts were found not only in these portions of deposit in primary deposition but also in other stratigraphic units containing intrusive Neo-Eneolithic artifacts. Technological and typological features of the whole Mesolithic assemblage appear to be homogeneous and referable to a Sauveterrian techno-complex.

The Mesolithic lithic assemblage of VF1, sector III, of Mondeval de Sora (BL, Italy). Economy, technology and typology

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VF1 site (2150 m a.s.l.) is located at the centre of the wide Mondeval basin, protected by a boulder. The extraordinary conservation of the deposit has allowed to recover not only a rich lithic assemblage, but also organic remains, and to identify dwelling structures.

From sector I, on the south-western side of the boulder, comes a thick layer rich in organic and lithic material laying on a pavement structure which has been dated to the Sauveterrian period and a Castelnovian burial.

Sector III, located on the North face of the boulder, is characterized by a well preserved stratigraphic sequence, attesting Mesolithic, Bronze Age and Middle Age frequentation. Radiocarbon dates are available for SU 10 (8.445 ± 50 BP; 7.587 – 7.370 cal. BC) and SU 32 (9.160 ± 90 BP; 8.613 – 8.243 cal. BC), supporting the archaeological attribution of these layers to the Sauveterrian.

The work consists in the identification of the lithic raw material outcrops exploited, the reconstruction of the reduction sequences and the typological analysis of the retouched elements and focuses on the Mesolithic layers (SU 10-20-30, SU 21 and SU 32). Besides an analysis on the whole Mesolithic assemblage, a comparison among the layers was done, aimed at the identification of chronological trends in the Sauveterrian frequentation.

The Castelnovian burial of Mondeval de Sora (San Vito di Cadore, Belluno, Italy): a specialised flint knapper's grave?

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The recent re-analysis of the burial goods from the Castelnovian grave of Mondeval de Sora has allowed several previously unexplored peculiarities of this unique discovery to be highlighted. Particularly the techno-economical and functional studies of the rich lithic and osseous assemblages have stressed the importance of a group of items indicating strict connections to specialised flint-knapping practices. As it has been suggested for a burial from the Neolithic necropolis of Mehrgarh, Pakistan (VI millennium B.C.), showing similar characteristics and dating back to a slightly more recent period than the burial of Mondeval (second part of the VII millennium B.C.) these features suggest that the man was at least a technically if not an economically specialised blade knapper (Perlès 1990). The man of Mondeval seems thus to embody a social role which will be also present in some Neolithic societies and the existence of which appears as a consequence of the introduction, during the Late Mesolithic, of new knapping techniques for blades and bladelets extraction (punch and pressure techniques).

The Castelnovian of Emilia. An overview on technical systems

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This poster focuses on the reconstruction of Castelnovian lithic technical systems based on a detailed analysis of the 16 main lithic assemblages discovered in Emilia (Northern Italy).

The main objective of reduction sequences is represented by the production of regular and standardized bladelets, generally obtained with unidirectional exploitation of small sized pebbles and blocks. Raw materials are represented by different silicified rocks (chert, radiolarite and silicified siltstone) which were collected near the sites through embedded procurement strategies. Core preparation and maintenance are usually simple, in connection to the regular morphology of exploited raw material blanks, and cores appear generally very exploited. A strict connection between raw materials and knapping objectives has been detected: the more homogeneous and vitreous types (Calabrian pebbles, other cherts types, some varieties of radiolarites) were used to produce regular bladelets and microliths, namely trapezes, while the ones of poorer quality or bigger size (silicified siltstone, radiolarite) to obtain flakes and common tools. The use of pressure technique has been recognized for bladelets extraction.

New insight on the Romito Shelter (Calabria): the lithic production of the Mesolithic levels

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Romito shelter (Papasidero, Cosenza), set forward the cave of the same name, has been explored in the 1960s by P. Graziosi. During his archaeological research, Graziosi opened a large trench parallel to the rocky wall, between the two well-known engraved boulders below the shelter. Graziosi brought to light a stratigraphic sequence containing several phases related to the Upper Palaeolithic and the Neolithic. During the recent archaeological research carried out by the University of Florence, new excavations in the shelter were taken up. The new excavations, performed close to the 1960s trench, revealed a pre-Neolithic sequence that testifies the human presence at Romito also during the Early Holocene. The stratigraphic sequence contains some Mesolithic palaeosurfaces overlaying an Upper Palaeolithic deposit. Mesolithic stone assemblages are placed within the context of the Sauveterrian-like Armature complex of the Lower Tyrrhenian region.

Session E - Ist vs. IInd Mesolithic

Presentations

The Montclus rock shelter (Gard) and the continuity hypothesis between Ist and IInd Mesolithic in southern France

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Dug in the 1960s, the Baume de Montclus rock shelter (Gard, France) concealed a significant stratigraphic sequence covering the whole Mesolithic. The oldest layers (l.30 to 17) belong to the first Mesolithic, and contained in particular hyper-microlithic flint industries (*Montclusien* facies of the *Sauveterrien*). The above layers 14 to 7, underlying to some Neolithic ones (layers 5 to 3), document a second Mesolithic sequence (*Castelnovien*). Layers 16 and 15 materialized the stratigraphical transition between those two main sets. The lithic industries coming from those two layers deliver characteristic elements referring both to the first and to the second Mesolithic. Most of the time, this duality was understood as the proof of the existence of a local transition facies between *Sauveterrien* and *Castelnovien*, and thus, of a permanent regional occupation. In this communication, we shall show that the analyses of spatial and stratigraphical data of those two layers 16 and 15, as well as that of their lithic industries, have to question this hypothesis. We shall see that there is more probably a real break between the two main sets of occupation, *Sauveterrien* and *Castelnovien*. Just like what we notice in a general way elsewhere in southern France, we cannot so highlight a transition facies between first and second Mesolithic. Consequently, we have to ask ourselves about the durability of human occupations at the end of the 6th millennium cal BC.

Some remarks about the chrono-cultural changes looking at the Mesolithic cores from North Italy, Belgium and Poland

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This presentation has for goal the discussion about the morphology, the size and the technical approach of more than 400 cores from the Mesolithic sites from the Italian Dolomite Region, Belgium and Poland. All these cores have been drawn and measured by myself and according to the same formal criteria.

Early- and Late- Mesolithic core collections from the North-Italian sites like Romagnano, Colbricon, Fontana della Teia and Riparo Gaban, the Belgian: Weelde, Opglapbbeek, Schulen, Helchteren, Neerharen and Ourlaine and the Polish: Calowanie, Januszkowo, Pietrzykow, Poddebe and Wieliszew will be shown, described and compared.

This global and standardized approach in the study of the Mesolithic cores from the different territories and cultures, can guide us through the time and traditions from the Epipalaeolithic peoples to the Neolithic societies.

Ist vs. IInd Mesolithic in southern France: Functional approach of techno-economic behavior through Castelnovian of Montclus rock shelter (Gard)

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In southern France, the spread of blade and trapeze industries ended the high stability of technical and economic choices made by Epipalaeolithic (*Azilien*) and first Mesolithic (*Sauveterrien*) groups.

Use-wear analysis of Azilian and Sauveterrian flint industries show, although biased by sites function, a low techno-functional investment, a simplification of procedures, an expedient and polyvalent domestic tool-kit with short cycles of use, thus reflecting a high level of flexibility.

With the second Mesolithic, the technical system, technical standards but also conceptual schemes, are substantially modified. On the basis of the use-wear analysis of the Castelnovian lithic industry recovered at the Montclus rock shelter (Gard, France) and other previous data, we shall try to see how these innovations are translated in terms of functional behavior. Are the appearance of new tools and the renewal of the geometrical microliths (operative schemes, design and use) correlated to new tasks, in accordance with the changes regarding the functional spectrum and the economic organization? We shall thus try to approach the functional logics which preside over the constitution of the second Mesolithic.

Romagnano Loc III rockshelter (NE Italy): an almost complete series for a diachronical perspective on Mesolithic lithic technology

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The Romagnano Loc III rock shelter (NE Italy, Province of Trento) contains a thick stratigraphic sequence including an almost complete Mesolithic series with layers attributed to Early (Sauveterrian) and Late Mesolithic (Castelnovian). This work discusses the results of the technological study carried out on the lithic industry both from Sauveterrian and Castelnovian layers and analyses changes recorded by technical systems along time. Particularly it aims at describing the *débitage* objectives and criteria of blanks selection for producing microliths and tools and to compare the Sauveterrian and Castelnovian reduction sequences in a diachronic perspective. The main evidence for changes in the two phases results strongly connected to the application of different techniques – i.e. direct percussion in the early phase and indirect percussion/ pressure flaking in the late Mesolithic - the use of which seems to influence the final products in terms of shape and regularity. It has even important implications in blanks transformation. By contrast the introduction of the new techniques in the Castelnovian does not seem to influence considerably the organization of reduction sequences, with traits which were peculiar of the Sauveterrian being maintained in the Castelnovian, but rather alter the balance between the investment applied in the stage of transformation and production.

Posters

The paradoxical pattern of the Mesolithic evidence in Liguria: piecing together the puzzle

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Liguria is a long arc-shaped chain of mountains, facing the Mediterranean to the South and the Po Plain to the North. Several open-air Mesolithic sites are known, mainly located on the rugged eastern bank. All of them are surface collections of chipped artefacts of Sauveterrian or Castelnovian typology. However none of them provided any biostratigraphical context; therefore archaeobotanical and archaezoological data are completely missing, as well as any ^{14}C dating. Conversely, a few sites yielded some environment archaeological insights without any association to industry. Ironically a few caves located in the West Bank have provided the only stratigraphical occurrence of tools ^{14}C-dated to the Mesolithic: however they are of final Epigravettian typology and the suggestion of the continuation of a Palaeolithic way of life up to almost the VII millennium cal. BC is hardly tenable. New lucky excavations and detailed investigations are needed, in order to sort out the assessment of the Mesolithic of a region that knew the earliest neolithisation of Northern Italy.

Session F - Mesolithic territories

Presentations

Social groupings of the Maglemosian – A northeuropean Lowland Case between 9 500 and 6 500 calBC

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Artefacts like the barbed bone point come in different types while other bone and antler tools show different geometrical decorations and so do the amber pendants. A single lithic tool type, the *meche de foret* (awl) has an all over distribution, but is restricted to a few early sites.

Now, can such a variation in the material culture be used to link or to separate different areas and different groups of people within the Maglemosian? The discussion moves from eastern England over northern France and across Dogger Bank to Denmark, southern Sweden, northern Germany and northeastern Poland.

The Mesolithic of Montenegro

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The territory of present-day Montenegro with its natural affordances, such as mountainous karst-dominated landscapes, the proximity of the Adriatic coast, deeply carved river valleys and high plateaus, holds a significant promise for the study of early prehistoric periods. To-date, archaeological investigations in this region revealed Mesolithic occupation deposits at only five rockshelters and cave sites. And while the number of locations with known Mesolithic deposits remains low and the Mesolithic timespans remain poorly dated, some important conclusions can be drawn on the basis of the existing dataset. In this paper, we review the evidence of Mesolithic adaptations across Montenegro and present new data regarding the study of existing collections, new AMS dates, and the results of new fieldwork.

The Mesolithic of Croatia

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Intention of this presentation is to present the current status of knowledge on the Mesolithic in Croatia. Over the past five decades, the Mesolithic in Croatia has been recorded at numerous sites, some quite interesting and rich in various materials, even though others were improperly interpreted.

A total of 58 sites are cited in the literature, of which 30 have undergone archaeological research. There are reliable absolute dates for six sites. Several, however, have been dubiously or incorrectly dated. There is an obvious disproportion in the number of settlements between individual regions. There may be various reasons for this, but the considerable increase in the number of sites in Istria as a result of targeted survey and research indicates that a probable reason is the differing levels of research in the regions, rather than different degrees of population density during the Mesolithic. Even though the status of research into the Mesolithic is incomparably better now than it was twenty years ago, many unknowns still remain, and considerable research is required to bring this level of knowledge to satisfactory levels.

Mesolithic high altitude frequentation of the Friuli region (Northern Italy)

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The discovery of numerous evidences dating to the Mesolithic near the lake of Pramollo, on the border to Austria, and the excavations conducted on the site Pramollo Dosso Confine allow to reconstruct the features of an ancient Mesolithic seasonal hunting camp and to recognise areas dedicated to specialized activities. The Mesolithic artefacts recovered at Dosso Confine, altogether more than 2,000 items, are made from local cherts and from rock crystal. The latter material, presumably collected on the Austrian side of the Alps, testifies a high mobility of the groups and indicates the directories of their movements.

The site of Pramollo gives also evidence of more recent frequentations of the pass dating to the Roman period, during which two fireplaces were made on the hill, and to the Middle Ages.

Surveys conducted in the eastern alpine belt until the Natisone Valley led to the discovery of several surface findings constituted by lithic industries and scattered archaeological material which allow to trace an overview of the prehistoric high altitude frequentation of the Friuli region.

Early Mesolithic highland and lowland occupation between the Venetian Alps and the Emilian Apennines (Northern Italy)

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The territory between the Venetian Alps and the Emilian Apennines is formed by a mosaic of environments which span from high mountains to hilly and plain areas. These present rather varied features from one extreme (Alpine watershed) to the other (Adriatic seaboard). We should also consider that the plain area (the Venetian-Po plain) in the early Holocene was still more extended than it is nowadays.

This vast territory is the object of research since the seventies and eighties of the last century. In the latest years both field and laboratory activities have grown more intense allowing to outline a rather rich and articulated framework of human occupation during the first part of the Holocene, including the presence of a set of sites in the plain area.

Such research has, on one side, allowed to identify large scale settlement dynamics and, on the other, to identify the key aspects that have regulated the relationship between Sauveterrian technological systems, raw material provisioning and settlement strategies. These aspects have favoured the extensive and intensive occupation of this area, in connection with the availability of a consistent biomass allowing what it is presumed to be a demographic increase.

The hunter-gatherers of Ullafelsen (Tyrol, A): where did they come from?

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Ullafelsen is situated 1869 m high in the Fotscher Valley, Stubai Alps, Tyrol. The geological background of the area is characterized by the presence of metamorphic rocks, mainly micaschists and gneiss, including metamorphic quartz (veins, strata), which was only seldom flaked because of its irregular fracture. On the other hand the petrographic variability of the lithic industry of Ullafelsen is very high, including different cherts, radiolarites and rock crystal. Since the beginning of the studies it was clear that most of the raw materials were brought to the site from other areas, far or very far from the site.

The lithic materials have been grouped in four main groups on the basis of their regional provenance. A group of artefacts has been realized with Jurassic Franconian Alb cherts (Bavaria), more than 200 km far to the north. Another group of artefacts comes from the Cretaceous Southern Alps cherts cropping in the Val di Non (Trento, Italy), around 120 km straight line to the south. The third group comprehends less suitable and nearer (30-50 km far, to the east) Northern Calcareous Alps Jurassic radiolarian cherts. The fourth group encloses the quartz artefacts; these are represented by the bad quality and local metamorphic quartz and by the high quality rock crystal that was collected 40-50 km to the south east (Tauern).

There is a general concordance between the raw materials provenance and their cultural attribution, even if this is visible only in a few typical artefacts. Among the Franconian cherts some elements suggest a Beuronian tradition whilst among the Southern Alps cherts and the rock crystal there are typical Sauveterrian tools.

Different raw materials and different cultural traditions are represented in the same site in the lower Mesolithic of the Stubai Alps. Understanding the provenance of the lithic materials constituted a basilar work to interpret the dynamics in Early Mesolithic in a wide area comprised between northern Italy, Tyrol and lower Germany.

Filling the gap – Recent Mesolithic discoveries in the Swiss Alps

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Until less than a decade ago, it seemed that - unlike in the surrounding part of the Alps - no sites dating between the end of the LGM and the Middle Neolithic existed in the alpine regions of central and south-eastern Switzerland. A number of recent rescue excavations, research projects and single finds have now proven the presence of people in these parts of the Alps from the 9th Millennium cal BC onwards. The majority of the currently known sites date between 7500 and 6500 cal BC. Both open-air sites and rock shelters are represented. Many sites lie above the valley floor, in the upper subalpine or alpine zones, and on routes to minor as well as major passes.

Together with new palaeoenvironmental data, these archaeological finds allow us first insights into the nature of interaction of Mesolithic people in the south-eastern Swiss Alps with their social and natural environment and into their relationship with regions further afield. Furthermore, the finds allow us to think about future research into the early prehistory of the south-eastern Swiss Alps.

Management of resources and territories in the Mesolithic of southern France: the case of Quercy

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The Causses of the Haut-Quercy, between the Pyrenean and the western part of the Massif Central mountain, offer one of the most important concentrations of Mesolithic sites known for southern France. These sites are located on the karstic plateau of Gramat, or on its margins, in the northern part of the Lot region. The purpose of this communication is to provide a synthesis of data accumulated over 20 years, concerning the palaeoenvironment, the economy (l.s, including the management of animal, vegetal or mineral raw materials) and the mobility of human groups, between the tenth and sixth millennium cal BC.

Posters

Mesolithic settlement traces in the area of Latemar, Monte Agnello and Monte Cornón (Fiemme valley, Trentino)

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Starting in 2006, the Museo degli Usi e Costumi della Gente Trentina (San Michele all'Adige, Trento – Italy) has conducted an ethno-archaeological research aimed at deciphering the strange phenomenon of the shepherd's writings found on Northern cliff-faces in the Fiemme valley, made with a local red hematite pigment and created in their thousands between 1660 and 1950. Field research, which took place between 2009 and 2011, made it possible to investigate most of the territory, about 6400 hectares, affected by the phenomenon of the inscriptions and to discover also some prehistoric sites, as well as the location of the hematite deposits.

Excavations, conducted in 2007 in the two shelters to confirm information given by the old shepherds of the valley, revealed, below the historical levels, a number of occupations characterized by the presence of hearths and carbon deposits despite the absence of material culture items. The radiometric dating of charcoal in these layers unexpectedly demonstrated that the shelters had already been used in prehistoric/protohistoric times: during the Copper Age, the Late Bronze Age, the first and second Iron Ages.

Many of these prehistoric sites, studied recently in the area of Latemar, Monte Agnello and Monte Cornón, indicate that the area was first populated in the Mesolithic. There are archeological evidences of seasonal hunting camps or base camps of nomadic hunter-gatherer groups who pushed up into the mountains during the warm season. The APSAT project (Environment and Landscapes of Upland Sites of Trentino), with its emphasis on the local topography and the early Holocene vegetation cover has tried to reconstruct and interpret the land use mobility patterns of these nomadic human groups, probably due to hematite search.

The "Total Archaeology Project" and the Mesolithic occupation of the highland district of San Vito di Cadore

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The identification of Mesolithic lithic scatters on the highland district of San Vito di Cadore (1800-2700 m a.s.l.) started during the 1980s enhanced by the discovery of the site of Mondeval de Sora. A new archaeological survey project has been developed in this area, particularly between Passo Giau and Col de la Puina, from 2011 to 2013. The adoption of a "total archaeology approach" has enabled to record different types of archaeological evidence, namely agro-pastoral sites, World War I structures, mining sites, rock engravings, isolated hearths, rock-shelters, along with prehistoric lithic scatters. Most of the latter can be attributed with a good approximation to the Mesolithic and correspond to the location of the previously identified stations, thus confirming the intense occupation of these territories by the last groups of hunter-gatherers. Only in some cases an attribution either to the Sauveterrian or the Castelnovian phase of the Mesolithic has been possible. The identified sites are located at altitudes between 1800 and 2300 m a.s.l. either along the crests that define the watershed-line separating different valleys or over gentle slopes close to it. As already observed for the Trentino area, this pattern seems to reflect displacements along paths (mostly corresponding to the modern ones) located above the tree-line which allowed good visibility on the surrounding territory and reduced vertical shifts moving from one location to the other.

New data on the Mesolithic from the Alpine foreland: the Montebelluna and Montello area, North-eastern Italy

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Recent research on the prehistory of the Montebelluna and Montello area has provided new data on the Mesolithic occupation. Lithic assemblages have been identified after review of the archaeological materials stored at the Museum of Natural History and Archaeology of Montebelluna and new findings have been made from the field surveys carried out between 2009 and 2011. The most important result was the identification, for the first time, of some flint cores and tools related to the ancient Mesolithic; whereas the recent Mesolithic was already known in the area. The Mesolithic findings from the territory of Montebelluna can been placed into the broader landscape of the anthropogenic population of the Eastern Italian Alps; particularly, the significant peopling of Montello and Montebelluna Hill suggests the strategic importance of this area in postglacial times, due to geographic and economic factors such as the favorable topographic position and the proximity to the Piave river, the geographical location close to the foothills of the Alps in a point of easy access to the mountain sector and, at least, the availability of nearby sources of raw material.

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