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Archeologia delle aree montane  
europee: metodi, problemi e casi di  
studio

*Archaeology of Europe's mountain  
areas: methods, problems and case  
studies*

a cura di Umberto Moscatelli e Anna Maria Stagno

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# Long Abstracts\*

\* Per favorire la circolazione internazionale dei contenuti dei saggi pubblicati nel numero speciale sull'Archeologia nelle aree montane europee, i curatori hanno deciso di aggiungere eccezionalmente una sezione destinata ad accogliere i riassunti estesi dei saggi. Si ringrazia il prof. Carlo Montanari per la revisione finale di questa sezione.



## Where worlds meet. Two Irish Prehistoric mountain-top 'villages' – Dove i mondi si incontrano. Due insediamenti preistorici d'altura nelle montagne Irlandesi

Stefan Bergh

Keywords: prehistoric settlement, prehistoric village, prehistoric round house, liminality, ritual landscape, landscape archaeology

Parole chiave: insediamenti preistorici, villaggi preistorici, struttura abitative preistoriche a pianta circolare, liminalità, paesaggi rituali, archeologia del paesaggio

This paper outlines the methodologies involved in the survey of Ireland's two largest mountain-top prehistoric settlements, and discusses their domestic and ritual context from a landscape perspective.

Mountains and high ground are often venerated as special places. It is their enigmatic quality of high places, their prominence and permanence in both the mental and physical landscapes that draw us to them. The occurrence of prehistoric remains on mountains highlights the question of the role of the topography, and to what degree this reflects a prehistoric perception of the symbolic role of high ground. In the Neolithic/Bronze Age mountaintops in Ireland were actively used for ritual purposes, clearly indicated by the erection of passage tombs and cairns on conspicuous summits. In a few instances large cluster of circular houses have been recorded in close proximity to these monuments.

The two by far largest clusters of round houses are found on the exposed upland plateau at Mullaghfarna, in the Bricklieve Mountains, Co. Sligo (c. 150 houses) and on the very summit of Turlough Hill, in the Burren, Co. Clare (c. 140 houses).

The gently rolling drumlin landscape of south Co. Sligo is visually dominated by the dramatic Bricklieve Mountains. This limestone mountain range consists of a series of north/south aligned hills and ridges stretching over some 10kms east/west. Archaeologically the Bricklieve Mountains are best known due to the c. 20 Neolithic passage tombs found on its different summits. This is known as the Carrowkeel/Keashcorran Passage Tomb Complex which is one of the four large passage tomb complexes in Ireland, and strongly underlines the ritual and symbolic role that these mountains had in the Neolithic.

The cluster of houses covering an area of c. 200 x 250m, is found at the eastern end of the mountain range, on a deeply fissured karst plateau at 225m OD, bounded on three sides by vertical cliffs. The house foundations consists of various form of slab built foundations built either directly on top of the fissured limestone pavement, or of circular areas quarried into the bedrock. The size of the houses ranges mainly between 8-13m, while some are up to 20m in diameter.

The uplands of the Burren with its truly spectacular mountainous karst landscape creates a unique environment in many regards. Its eastern extent is defined by a dramatic mountain range extending for some 15km north/south. Turlough Hill forms part of this mountain range and consists of a ridge some 1200m long with its highest point being at 280m OD. The archaeological remains on Turlough hill consist of a large cairn, a low profile multi-vallate enclosure and some 140 circular house foundations, all on the higher western summit, while a roughly hexagonal stone built enclosure, measuring some 225 across, is located at the eastern summit.

The house foundations consist of circular foundation walls of limestone slabs with diameters

ranging between 6-11m. They occur in small groups and most of them are built on top of the actual limestone pavement while some have been quarried into the bedrock.

The houses, together with the cairn and the multi-vallate enclosure are all restricted to the flat, exposed summit, even though large areas of flat, and more sheltered ground, are present immediately below the summit.

Besides a minor trial excavation at Mullaghfarna by the author, no excavations or detailed survey had previously been conducted at any of these sites, from which follows that their chronological as well as cultural context had not been established.

This present paper presents the survey work at these two sites undertaken recently, and partly ongoing, by the author. The main aim with the surveys was to create a detailed record of all the houses, to be able to analyse construction modes as well as to facilitate detailed spatial analysis of the areas and the houses. Due to the huge number of stones used in the constructions of the houses at Mullaghfarna as well as the presence of the rough and varied bedrock often being a part of the house constructions, a ground based survey using total station or GPS was not considered a viable option at this site.

Considering that both locations, and especially Turlough Hill are rather inaccessible, combined with the large number of sites at both locations, the methodology chosen was digital photogrammetry based on low level aerial imagery. The vertical imagery was captured at 1,800ft producing imagery at a scale of 1:1,500. After scanning digital imagery with each pixel representing 5cm on the ground was produced. This enabled the production of Digital Elevation Models with extraordinary high resolution, from which very detailed topographical analysis of each house could be made. This has then actively assisted in the analysis and interpretation of the morphology of the sites, and thereby supporting an interpretation of their role and link to the the nearby ritual monuments.

## Inspecting the transformation of Roman settlements in the Upper Potenza Valley (Marche region) across Late Antiquity and into the Early Medieval era – Ricerche sulla trasformazione di insediamenti romani in Alta Valle del Potenza (regione Marche) attraverso la tarda antichità e nell'era altomedievale

Francesca Carboni

Keywords: Potenza Valley, rural sites, continuity of occupation, 7<sup>th</sup>-9<sup>th</sup> centuries, pottery markers.

Parole chiave: Valle del Potenza, siti rurali, continuità di occupazione, VII-IX secolo, indicatori ceramici.

The presented analysis shows the changes that occurred in the settlement patterns in the upper Potenza river valley (MC, Marche region) during the transition period between Late Antiquity and Early Middle Ages. The considered area, positioned within an intermediate basin between the Umbria-Marche Apennines and a lateral dorsal ridge, dominated by the hilltops of Monte Primo and Monte Castel Santa Maria, coincides with the westernmost of the sampling zones investigated by Ghent University in the context of the Potenza Valley Survey project, carried out since 2000, under the direction of Frank Vermeulen.

The systematic survey in the upper-Potenza valley, combined with field-checks of crop and soil marks traced through aerial photography as well as with information from previous finds in the area, allowed some 34 sites to be very well-defined as non-problematic Roman “settlement sites,” based on the presence of artifact scatters.

The considered rural sites were located within the *municipales agri* of *Matilica* (the ones north of the Potenza river) and *Camerinum* (the ones southward).

Both the cities, as well as the settlement of *Prolaqueum*, born in connection with the *diverticulum* of the Via Flaminia linking *Nuceria* to *Ancona*, which show an undoubted continuity of occupation since Roman times.

The first study of the archaeological materials allowed to ascertain for a third of the total sites number a continuity of occupation until Late antiquity (half of the fifth century A.D.), while three hill top sites were recognized as Medieval settlements.

As a result of the review of ceramic materials collected during the surveys, the evidence now demonstrates the *longue durée* of many of the rural sites identified along the upper Potenza valley.

Compared with the catalogue of sites already published (Percossi, Pignocchi, Vermeulen 2006), it could in fact be ascertained that three sites more of the rural Roman settlements occupied until Late Antiquity were frequented also during the early Middle Ages: one of them is located north of the Potenza river, in the north-eastern corner of the considered sample area, while the two others are situated southward, respectively within the actual municipality of Pioraco and Camerino. These settlements are all on hilltops or on high slopes areas, overlooking the valley below and in good visual relationship among them. So, a series of clues associated with the recognition of new pottery markers, mainly related to the category of “light clay unglazed ware”, possibly dating to the period between the end of African and Eastern imports and the emergence of new forms characteristic from the tenth century in central Italy, allows for the reconstruction of a scenario of substantial continuity within homogenous topographical contexts.

The analysis confirms the necessity of overcoming the geographical framework represented by the “tout-court” river valley territory for focusing the attention on the relationship between town and countryside, from the countryside perspective, such as the sustainability of the demographic growth of towns and the diachronic developments in the settlement chamber of which towns are part. Archaeologically, a way to understand the change of rural settlement patterns in the upper Potenza valley during the considered transition period is to combine and compare the data produced through survey investigations in the rural sites with the ones that have merged (or will be brought to life) from the excavation of the stratigraphies related to the different phases of life at the concerned cities *Camerinum* and *Matilica*, as well as *Prolaqueum*.

The matching of all the different frames can lead to the restitution of the picture in its complexity and to the comprehension of the destructurement process patterns that surely occurred to rural settlements, as well as to the urban centres, before their subsequent reconstruction, also in contexts of prolonged duration or even uninterrupted continuity.

## Le aree rurali dell'Appennino Ligure tra età romana e tardomedioevo. Ricerche storiche e archeologiche in alta Valle Scrivia – The rural areas of the Ligurian Apennines between the Roman period and the Late Middle Ages. Historical and archaeological researches in Valle Scrivia

Giovanni Battista Parodi

Keywords: Archaeology, Apennines, Liguria, Late Antiquity, Middle Ages  
Parole chiave: Archeologia, Appennino, Liguria, tardoantico, medioevo

This paper provides a summary of data gathered in the PhD project: *Popolamento e strutture del territorio nelle aree rurali del Genovesato e in alta Valle Scrivia tra tarda antichità e XV secolo* (Scuola di dottorato di ricerca “Riccardo Francovich: Storia e Archeologia del Medioevo, Istituzioni e Archivi” – Sezione di Archeologia Medievale, XX ciclo).

Upper Valle Scrivia, an area of 250 km<sup>2</sup> located between Genoa and the plain has never been studied systematically. It has been chosen as a sample area for systematic and direct analysis of historical, cultural, social and economic problems of the Ligurian Apennines in the period considered in light of all the sources that were available.

Surface surveys have been based on what emerged during the first stage of data collection (analysis of related literature, catalogue of known sites, census of over 250 written documents – mostly published – dating back to a period between the 9th and 18th century). They were conducted on an overall surface of 2.5 km<sup>2</sup>. Major problems of visibility have had to be tackled due to the morphology of the area and the prevalence of woodland by using the strategies that most suited different areas (targeted and dotted, extensive, intensive, transect surveys). This approach was complemented by carrying out shovel tests which were conducted in two of the sites of greatest archaeological interest. The data collected were gathered in a GIS platform created on purpose.

The analysis of the historiography issues that were studied has generated an ongoing debate on the problems discussed at national level, which only partially seem to have influenced the research guidelines in the area considered which has only marginally been involved – just like most mountain areas in Liguria – by systematic studies and investigations.

Data regarding settlements in the area between the Roman imperial period and Late Antiquity are rather fragmented and partial. They come from surface surveys and emergency archaeology, which started to be carried out in the area considered in the late 1950s, as well as fortuitous finds that occurred as a consequence of construction excavations.

The evidence found (the so called ‘roof tile sites’) have for years been linked to lower classes reoccupying the mountains in Late Antiquity and Byzantine age as a consequence of the recession of urban centres, which led to hypothesise a late Romanisation of the Apennines. During the research the data which did not concern Upper Valle Scrivia have been examined again in light of the latest study directions suggesting settlement dynamics generated by modes and timing that differed from those hypothesised in the past. Surface surveys and shovel tests have allowed to outline a clearer framework – though still incomplete – of the history of events and distribution of settlements as well as mobility in the period examined. The knowledge about the Early Middle Ages in the area examined is rather incomplete and based on occasional finds and rare documents offering a totally partial perspective of

settlement structures. The scarce data about the period have been analysed in light of the direction of national research with particular focus on the supposed survival of a settlement network connected to the main routes and the supposed hub role played by places of worship.

Despite the lack of data, the existence of settlement dynamics and forms has been hypothesised in light of the evidence in the Genoa area and Central and Northern Italy between the 9th and 11th century.

Thanks to the enormous growth of written sources, the settlement and territory organisation have only been known since the 12th century. However, it is important to note that despite such large number of documents, systematic and complete studies analysing the relationships between different forms of power, encastellation and settlement structure do not exist. In addition to this, Medieval archaeology has only developed in the last decade with studies conducted in certain castles.

The current research, with the revision of historical and archaeological literature, the analysis of written sources (published and unpublished) and the study of data gathered during surface surveys, has allowed to outline a thorough framework of the organisation of the area between the 12th and 15th century. In particular, the focus has been on the timing and modes of encastellation and the connections between encastellation, the structure of settlements and the use of natural resources following the historiography debate at national and regional level.

## Aperture datate negli edifici delle zone montane: una tradizione da indagare – Dated openings in the buildings of mountainous areas: a tradition to be investigated

Anna Boato, Rosa Pagella

Keywords: Building archaeology, building openings, mountain archaeology, Lunigiana

Parole chiave: Archeologia dell'architettura, aperture degli edifici, archeologia montana, Lunigiana

In 1989 Tiziano Mannoni, Isabella Ferrando and Rosa Pagella published a study that laid the foundations for what is known as “chrono-typology”, in which it was observed that on the buildings of mountainous areas dates engraved on stone structural frameworks were frequently found. From this finding other authors then underlined how in the territories studied (Valdinievole in Tuscany and the area around Brescia) these dates were most commonly found in mountainous areas and rarely on hills or on flatland. We cannot state whether and to what extent this statement can actually be generalised, but it cannot be denied that in several residential areas in the Alps and in the Apennines the tradition of engraving the construction date in stone (besides other symbols of various kinds) is extremely common. In Liguria, stone was also frequently used along the coast, but dated stone portals can be seen mostly in the mountainous inland areas.

The Intelvi valley, near the city of Como, was the place of origin of the *magistri antelami* who monopolised the builder's corporation in Genoa. In this valley more than 60 portals display dates from the XVII century to the XIX century. However, very few dated portals may be found in Genoa, the workplace of these masters.

Thanks to the digital catalogue of openings compiled by Tiziano Mannoni and by other members of the Institute for the History of Material Culture (ISCUM) since the 1880s, it is possible to outline a map of this phenomenon, which provides interesting and thought-provoking quantitative data, even if it is not yet systematic and exhaustive.

Up to now ISCUM has conducted a census on 2676 openings, 740 of which show an engraved date (718 in Italy and 22 in Italy's bordering countries). These openings are located in north-central Italy, especially in Tuscany and Liguria (and more specifically in the Lunigiana area, where the research started). A lot of data (not yet recorded in a digital form) was collected through student theses from the Faculty of Architecture in Genoa on the Ligurian region under the guidance of Tiziano Mannoni.

Nearly all the openings registered up to now are located in mountainous areas and following the ISTAT (National Institute for Statistics) classification it can be noted that only 16 openings out of 718 are located in non-mountainous areas of the Ligurian coast and of southern Piedmont. In addition, only 6 are in "partially mountainous municipalities" in Liguria and Tuscany, while the rest are "completely mountainous municipalities" located in various areas throughout the Alps and the Apennines.

Looking at the chronology of these dates, the following list was compiled: 12 in the XV century, 68 in the XVI century, 154 in the XVII century, 242 in the XVIII century, 226 in the XIX century and 34 in the XX century. The source material confirms that sufficiently frequent cases are traceable from the fifteenth century, even if in the Camonica valley there are some dated portals which date back to the previous century.

Even if the data available is not exhaustive and any conclusion is only provisional at the moment, it can be claimed that the habit of remembering the construction, the expansion or the finishing of your home through the insertion of a date (often but not only engraved on the entry doorway) is mostly (but not exclusively) common among inhabitants of the Alps and the Apennines, reaching even the most remote areas. On the contrary this habit did not seemingly spread in any important urban context and it very rarely appears in flatland areas. It is possible that the frequency or the lack therein of dates on buildings depends upon different social structures and linked also with ownership of property. In many mountainous areas starting from the fourteenth and fifteenth centuries ownership of property and small patches of land spread as these areas, which were not highly productive, became abandoned by the feudal royalty that had previously settled there for military reasons. A new class of small landowners came about with the possibility for them to own permanent homes, as an expression of the people living, working and investing their wealth in them. From the sixteenth century in the wide flatland areas, thanks to land reclamation and new agricultural techniques, big families of extra-urban lineage or of clerical bodies started owning vast and profitable plots of land. They built and administered the manufacturing and residential buildings for farmers and day labourers.

The present article does not seek to explain the social and cultural reasons which led many populations to leave a material trace of their history, but it aims to draw the reader's attention to this interesting tradition, without forgetting that it helps us to rebuild the evolution of the inhabitants of these regions, thanks to analysis of the dates, which are then compared to the chrono-typological charts that we will be able to build.

## Approche archéologique à l'étude des édifices religieux de la Corse médiévale – Archaeological approach for the study of religious buildings in medieval Corsica

Paola Camuffo

Keywords: Archaeology of buildings, Corse, Middle Age, Church, Know-How, techniques  
Parole chiave: Archeologia dell'Architettura, Corsica, Medioevo, chiesa, tecniche costruttive, *savoir-faire*

During the XI and XII Centuries in Corsica an increase of the network of worship places is well documented. This event is correlated directly to the establishment of new religious centers that represents one of the most tangible manifestation of politico-religious propaganda as a consequence of the Reform carried on by the Church. In particular, in 1077 Pope Gregory VII confers the vicariate of the island to the bishop of Pisa, Landolfo, in order to restore the apostolic nomination on the island and to confirm the sovereign rights of the Church of Rome on this territory. Then in late medieval period (XIV-XVI Century) in Corsica we can observe a deep transformation, although slow, of religious buildings related to changing context. In fact, while networks of worship created in the XI-XII Century gradually decrease, between the XIV and the XVI Century new parishes appear, causing the abandonment of old churches, including *pievi* and cathedrals. The nomination of strong personalities coming from Italy to the head of the island's bishoprics is probably related to this process and it is possible to observe, through them, the interference of Genoese authority in ecclesiastical and political affairs of the island. In this context few preexisting churches are restored or improved and many of them are even abandoned before the fourteenth-fifteenth Century. At the same time new religious buildings are created near the village suddenly inheriting the parish function and establishing a solid relation with the population.

On the basis of these considerations, a research focusing on the architectural features represents a very important and crucial approach in order to analyse and understand the modality of artisan movement and the transfer of different know-how but also in order to define and quantify the building activity in the Middle Ages on new methodological bases. This issue raises a series of questions of architectural-chronological order :

Is it possible to delineate the evolution of architectural features from the XI to the XVI Century? The insular building activity is exclusively due to external labor or also to the participation of local productions? How the insular society has acquired and re-elaborated new technologies?

The doctoral project «*Gli edifici di culto medievali nella valle del Golo. Analisi archeologica sull'evoluzione delle tecniche murarie in pietra tra XI e XVI secolo*» conducted within the University of Corsica – CNRS Laboratory UMLISA 6240, contributed to answer to this questions highlighting a relevant building activity dating to the Middle Age.

The archaeological research was focused on the analysis of 130 structures including different religious buildings such as cathedrals, parish churches, secondary chapels, monastic churches and convents situated in the geographical context of the Golo Valley, a region located in the northern Corsica. Due to the lack of a solid and reliable written documentation, a different and new approach was necessary. For this reason the methodology applied for the study of this religious architecture was primarily based on the principles of the *Archeologia dell'Architettura* and the detailed analysis of the process of construction (plans, openings

and decorative elements).

In particular the study demonstrated how the acquisition of a new *savoir-faire* shows interesting features probably deriving from the Italian religious architecture. Regarding this hypothesis, it is documented the presence of specialized teams of foreign builders, especially coming from the North-West of Italy and Tuscany too, correlated with the first and most significant increase of places of worship, dated to the end of the XI Century and the XII Century. The acquisition of these new techniques hasn't lasted for a long time and a new restart of building activities, during the XIV and the XVI Century, attests a change of reference models, which have probably come from the North-West of Italy.

## Il forno di affinazione di Rondolere (1788-1813) – The Rondolere finery (1788-1813)

Maurizio Rossi, Anna Gattiglia

Keywords: Iron metallurgy, finery, archaeological excavation, Napoleonic era, Sessera valley  
Parole chiave: Siderurgia, forno di affinazione, scavo archeologico, età napoleonica, val Sessera

The Rondolere steelworks, situated at 1176 m in the upper Sessera valley (Bioglio, Biella, Italy), treated iron ore and cast iron to be transformed into semi finished and finished products. The activities were begun by G.B. Rej in 1784 and were carried on by L. Ramella until 1813. After desertion, the site was reconverted into a pastoral settlement since 1854-1885, by construction of new buildings and modification of the existing ones.

An archaic blast furnace, operative until 1804, treated at first local magnetite ore from nearby Pietra Bianca deposits, then, finally, after the exhaustion of these mines, hematite bought at Traversella (Chiusella valley). This uneconomic constraint was the cause of the standstill of cast iron production.

However, the finery and the associated hydraulic hammer continued to convert imported cast iron into steel and to produce wrought iron agricultural tools. Several archive documents of the Napoleonic era specify the provenance of the cast iron (Ivrea), its purchase and transport prices, the treatment capacity of the plant (5,4-10,8 t of cast iron in the years 1807-1810, with an output of 80,7%), the consumption rate (6:1) and price of Beech charcoal (as confirmed by archaeobotanical analyses) fuel, the daily production in steel (200 kg), the number of workers and their salary.

Archaeological excavations and restorations in the years 2002-2004 revealed the entire plant and transformed it in an archaeometallurgical area open to the public.

Particularly important is the presence of the finery, a complex, not yet well known installation, which was rarely archaeologically identified and excavated in Europe, being sometimes took for hearths having a different function.

The evidences point out a 2,6 x 2,5 m<sup>2</sup> large, more than 1,5 m high, installation, built in the same room housing the hammer, one of the chaferies existing in the site, a tank for diluted clay and other equipments. The lower part of the finery was protected by stone slabs and ashlar coming from the post-functional collapse of cowl, roof and walls. So, several components – masonry, basin, working surfaces, a thick stone work bench – are well preserved and measurable, allowing us to know or to reconstruct the position and the

technical features of clay coating, tuyere, underground blowing duct and slag evacuation device.

Most of constituent materials – mica schist, monzonite, clay – were locally selected in surrounding slope deposits, but in the wall housing the tuyere an allochthonous fine grained gneiss was used.

High temperature heating requested by cast iron decarbonization (up to 1300-1400 °C) caused a deep thermal alteration, in oxidizing conditions, of such materials. Two melted surfaces on the opposite inner side walls indicate that cast iron plates, normally covering the basin as referred by several old texts, were not in use at Rondolere.

Production rejects include ferrous powder, prevalently broken cast iron ingots, three types of slag, steel bar cuttings and semi finished items. An entire ingot, trapezoidal cake shaped, was re-employed as building material in the pastoral settlement. The chemical analyses detected the absence of graphite, placing the samples within white cast iron, with  $\leq 3,90\%$  carbon content. This low percentage may be explained by the small height of the blast furnace (4,55 m from the top to the bottom of the crucible). Refining slag revealed fayalite (iron silicate), wüstite (iron oxide) and consistent metal proportions FeO- and Fe-shaped. Some steel semi finished objects bear a film of hardened grey clay, resulting from the immersion in a diluted clay bath, to avoid the pieces to weld together during the manufacturing.

Old technical handbooks and drawings may help in the study of archaeometallurgical remains, but their use is not always simple. The plants should be compared on the basis of their functions and production processes, not of their morphological similarities. Equally important is the chronological and geographical consistency of the sources, although the transfers of technology coming from study journeys and displacement of workers should not be forgotten. In such a perspective, the Rondolere finery is interpreted with reference to the manuscript *Viaggi Mineralogici* by S.B. Nicolis di Robilant (1788), to the treatises *De venarum metallicarum excoctione* by E. Pini (1779-1780), *La sidérotechnie* by J.-H. Hassenfratz (1812) and to the drawings of the Napoleonic era representing steelworks in Biella region.

The paper aims at starting a reflection, on an archaeological ground, on the classification of the fineries, by setting aside the geographical terminology inherited from the XVIIIth-XIXth century handbooks and by stressing the technological details and the correspondences between material and documentary data.

## Progetto R.I.M.E.M.: problematiche (e dati) delle ricognizioni nelle aree interne delle Marche – The R.I.M.E.M. Project: problems and data from the archaeological survey in the Marche inland

Umberto Moscatelli

Keywords: Archaeological Survey methods in ploughed fields, Landscape Archaeology, transition from Late Roman Period to Early Middle Ages, Marche Inland

Parole chiave: Metodologia della ricognizione sui campi arati, Archeologia del paesaggio, transizione dal tardoantico all'altomedioevo, entroterra delle Marche

This paper concerns the methodological aspects and some main results of a archaeological survey carried out since 2006 in the inland of the Marche Region and related to the R.I.M.E.M. project (the Italian acronym corresponds to the English “Researches on the Medieval Settlement in the Marchean Inland”). The article is strictly linked to the other papers published in this special issue, all concerning the same project, and in a special way to the three essays focused on the pottery finds, presented by Ana Konestra, Eleonora Paris and Sonia Virgili.

In the first section the Author reports about the hard methodological problems faced in the course of the research:

1. Geomorphological features. All the surveyed area is characterized by hilly and mountainous lands, interspersed with a few fields having a lower slope. This activates strong slope processes, landslides and colluvial deposits that make difficult the reading of the archeological record.
2. Vegetation cover. The inland areas are affected by a low population density because of the depopulation phenomenon increased after World War II, even due to the strong industrialization of the middle valleys and of the coast. By consequence, the cultivation of many fields has been abandoned, resulting in a wide spread of forests and uncultivated lands. In short, a large number of fields has a low or no visibility, and only about the 40% of the whole area is suitable for survey in plowed zones.
3. Pottery fragmentation. The mechanized farming techniques produce a strong fragmentation of the archaeological finds, making seriously complicated the typological and chronological classification.
4. Lack of knowledge. Medieval archaeology is not a widespread discipline in the Marche; then the shortage of published stratigraphic sequences represents a further impediment to the interpretation of archaeological data collected, even because the majority of the pottery sherds is constituted by coarse wares.
5. As for the time span between the Roman Republican period and the Xth century A.D., only a very small part of the sherds was diagnostic (less than 17% of the selected material; less than 2.4 % of the whole).
6. All the problems listed above make very difficult the classification of the sites and the interpretation of the great amount of off-sites, apart from the main materials concentrations, attributable to sites clearly recognizable *in situ*.

In the second section of the paper, the methodological – technical aspects of the survey are illustrated. As the R.I.M.E.M. project relies on a diachronic approach, a very intensive analysis has been applied, based on a grid survey in each field (10 x 10 m squares); this is the only way to gather the markers of Early Medieval Period and others characterized by a low/very low visibility, and to prevent the biases due to the inexperience of the students engaged in the survey.

All the field activities are recorded in several forms, which the author encloses to his essay. Finally, the paper illustrates some results of the survey in some selected settlement areas, especially focusing on the rural settlement evolution between the Late Roman Period and X-XIth centuries.

In addition to previous geophysical analysis and aerial photos taken from low-flying airplanes, is parsed here the contribution provided by the pottery findings (see Konestra, Paris and Virgili in this same issue).

Despite of the problems described above, the archaeological sources – contrary to an old approach based only on documentary sources – allow us to understand that the

transition between the Late Roman Period and Early Middle Ages did not correspond to an abandonment of the settlement areas, but rather to a change, the details of which however still escape us.

## Reperti ceramici dalle campagne di ricognizione 2006-2008 del progetto R.I.M.E.M.: metodologie di lavoro e risultati – Pottery finds from the 2006-2008 field-walking campaigns of the R.I.M.E.M. project: methodology and results

Ana Konestra, Eleonora Paris, Sonia Virgili

Keywords: Working methodology on pottery from field-walking campaigns, archaeometric analysis, pottery catalogue, fabric catalogue

Parole chiave: Metodologia di lavoro su materiali da ricognizione, analisi archeometriche, catalogo dei reperti ceramici, catalogo degli impasti

The paper, an introduction to the more detailed pottery analysis carried out on the material and presented in Virgili and Konestra (in this volume), serves to explain the working methodology that was applied to all ceramic finds yielded by the field-walking campaigns of the R.I.M.E.M. project. In addition, an account on the methodology and results of archaeometric analysis (carried out by E. Paris and Cinzia Martinelli, University of Camerino) is presented as well.

Firstly, the methodology of quantification and cataloguing is explained, which was combined with other survey data in a specifically developed database, where the ceramic finds could be catalogued in great detail and linked to bibliography entries allowing for a fast overview of analogies. During the first stages of pottery analysis the grouping of finds was done on the basis of the presence or absence of a slip (the slipped category being used only for medieval pottery – *invetriata*, *smaltata* – while roman slipped ware was treated along with the unslipped wares). This approach provided basic quantitative data for each of the UTs analysed. The choice of shreds to be catalogued in detail by recording them in a dedicated section of the database and the methodology of dating are also explained, drawing on examples and know-how from various field survey studies.

A large part of the cataloguing process consisted in the creation of a fabric's catalogue that proved to be useful not only as a mean for fabric definition, but also as a valuable aid in fragment's attribution and as a first step in the preparation of archaeometric analysis. Also, a catalogue of decorations and slips was used to characterize even better the various pottery classes.

The second section of the paper is dedicated to the archaeometric analysis, its methodology and results, with a possible interpretation for some of the peculiarities identified. All analysis was carried out at the Laboratory for Mineralogy at the University of Camerino, where 38 fragments were studied by powder X-ray diffraction (PXRD), after which 12 samples were selected to be submitted to Polarized light microscopy (MO). All but two samples resulted to be congruent with the Umbro-Marches lithology, while one sample could be linked to the previously identified production of the Capocuiano samples and another with Tyrrhenian lithological features. Strictly local features were identified for samples of the B group which

diverse dating suggests a long lasting pottery production tradition in a restricted geological area. Further analytical potential is also discussed.

In conclusion, a sum of the analysis' results is presented which, although firstly meant to provide only chrono-typological attributions of the shreds, brought to light numerous insights on class' distributions, potential supply areas and some form-function characteristics that can be directly linked to site's typologies.

As appendix to the paper a selection of fabrics from the catalogue is presented, where the most relevant features of each type were recorded by macroscopic analysis, and which complements the pottery catalogues contained in the following papers (Virgili and Konestra, in this volume).

## Ceramiche romane e tardoantiche delle campagne di ricognizione 2006-2008 del progetto R.I.M.E.M. – Roman and late Antique pottery from the 2006-2008 field-walking campaigns of the R.I.M.E.M. project

Ana Konestra

Keywords: Pottery analysis from field-walking campaigns, roman pottery, late antique pottery, pottery catalogue, pottery products circulation

Parole chiave: Analisi dei materiali ceramici da ricognizione, ceramica romana, ceramica tardo antica, catalogo dei reperti ceramici, circolazione dei prodotti ceramici

During the field-walking campaigns of 2006-2008 carried out by the R.I.M.E.M. project a huge amount of pottery pertaining varied classes and belonging to various periods has been collected. After the cataloguing of diagnostic shreds by operating a subdivision in classes and types, these were dated on the bases of preferably regional analogies, but also those with extra regional corpuses. This paper deals with Roman republican, imperial and Late Roman fine wares, lamps and coarse wares from some of the most significant sites identified during analysis.

Roman republican and imperial fine wares and lamps offer a unique insight and are great means for somewhat narrower dating of field survey material. Among the R.I.M.E.M.'s finds pertaining to the Republican and early Imperial periods, black-gloss wares (including a Greek black-figure shred and a supposed *Alto-Adriatico skyphos*), Italian *terra sigillata* and thin-walled ware were identified, while for Mid- and Late Imperial dates (broadly defined as Late Antiquity) *terra sigillata medioadriatica* and African Red Slip Ware were isolated. For some of the black-glossed wares Tyrrhenian, Adriatic and regional provenances (*Aesis*, *Ariminium*) could be implied, which suites well the overall regional patterns, just as for the Italian *sigillata*, which is mainly of Central Italian origin, with few shreds belonging to North-Italian productions. Lamps belong to the common types Loeschcke I-IV and *Firmalampen*, with just one stamped example.

Late antique fine wares are less numerous, but nevertheless indicative for their distribution in the project's area. While the examples of *terra sigillata medioadriatica*, until recently unknown in the area, broaden the classes' distribution pattern, the African Red Slip Ware, present with the most widespread types (i.e. Hayes 61, 87), is indicative of both a late

occupation of certain sites and the on-going connections with coastal sites where it was most probably commercialized.

Coarse ware classes, including cooking ware, follow patterns common to the fine wares, with regional and extra regional analogies that often include the aforementioned Tyrrhenian (Lazio, Toscana), Umbrian and Mid-Adriatic areas. Some types with regional occurrences are also present throughout the material, but more geographically widespread analogies seem to be more common for the earlier finds, while a regional pattern, exemplified in the occurrence of certain forms, seems more indicative of later material. A peculiar shape, the pan, numerous among the finds of UT 802, seems to belong mostly to Late antiquity with numerous analogies in the Marches (*Urbs Salvia, Suasa*), providing indications of a culinary custom that could have emerged regionally, where archaeometry has proven the production of the form.

Some of the coarse ware shapes, on the other hand, proved to be difficult to date as they were maintained virtually unvaried throughout longer timespans. It is the case of the *clibanus*, a shape numerous among the R.I.M.E.M. material, whose dating spans from the Republican period to the Middle Ages, although its presence is again an indicator of certain traditions. A comparative approach, based on the shape of the flange and fabric analysis, was applied to the *clibani* in an attempt to provide narrower dates for these finds, while rim analogies proved to be inconclusive. Tentative and mostly inconclusive resulted also the chronological attribution of coarse ware decorations (spanning from rouletting to incised), which yielded some results only in those cases where shapes and fabric were congruent with the proposed dates.

Amphorae, whose types usually provide sufficient chronological indications, were identified with a high degree of certainty only for a few rim fragments, while the dating of most amphorae fragments was inconclusive due to their size or vessel's part.

The overall conclusion of the work carried out on Roman and late Antique pottery from the R.I.M.E.M.'s 2006-2008 campaigns lead to the identification of at least one long-lived site, located at the UT 802. A rural, but also residential, character of this site is evident from the fine wares and some coarse ware shapes, while a seizure in site's occupation seems to have happened before the onset of the early medieval period.

Typological analysis of the pottery, on the other hand, although suffering from the usual surface finds' problems, proved to be effective in identifying at least formal influences if not true provenance, although archaeometry analysis did identified some features typical for the geology of the regions noted through the study of pottery as well (i.e. Tyrrhenian areas).

**La ceramica comune di età medievale del progetto R.I.M.E.M. (Ricerche sugli Insediamenti Medievali dell'Entroterra Marchigiano): campagne 2006-2008 – Medieval coarse ware from R.I.M.E.M. Project (Researches on the Medieval settlement in the Marche Inland): 2006-2008 campaigns**

Sonia Virgili

Keywords: Pottery analysis from field-walking campaigns, medieval coarse ware, pottery

catalogue, pottery products circulation

Parole chiave: Analisi dei materiali ceramici da ricognizione, ceramica romana, ceramica tardo antica, catalogo dei reperti ceramici, circolazione dei prodotti ceramici

The study of medieval coarse ware of the RIMEM Project (director prof. U. Moscatelli, University of Macerata) was carried out in a context where published sites and specific studies regarding medieval archaeology are few, as it is the case of the Marche. Only recently papers presented at two Conferences (Spoleto, Ravenna) focusing on the passage from late Antiquity to the Middle Ages in central Italy have provided broader analysis of pottery productions and trade patterns, while also presenting new excavations. One aspect dealt with in the introduction is the archaeological data (and the lack of it) used during research, with the presentation of the most important sites for comparative analysis along with a preliminary methodological discussion.

In the light of all difficulties and limits of the study of surface finds, in this paper we present a selection of pottery shreds collected during the 2006-2007 campaigns and at some UUTT surveyed in 2008.

The most diagnostic shapes for early Middle Ages belong to cooking pots, basins/covers and other coarse ware such as small amphorae and jugs, which find analogies at regional sites, in the middle Apennine area (Umbria, Emilia Romagna), the Adriatic region (Abruzzo) and at sites along the Tyrrhenian coast (Rome, Toscana). The archaeometric analysis defined a general compatibility with local clays and possible continuity in vessels production technology from late Antiquity onwards, confirming what was already noticed throughout morphological studies.

Common indicators for this period are varied decorated vessels of closed or open shapes, with combed wavy or horizontal lines or decorated by rouletting. The first type has a wider chronological span (late Roman period – Middle Ages), but local and extra-regional analogies show an increase during the centuries of the early Middle Ages, especially on cooking pots and bowls. For the Lombard period stamped vessels are present, directly connected to Lombard productions of northern Italy, but probably made locally with technological continuity from previous periods, as attested by archaeometric analyses.

The Middle Ages (XI-XV c.) are represented with more numerous and varied coarse ware types (jugs, basins, cups, bowls) showing more frequent similarities with Tyrrhenian productions (Lazio, Campania, Toscana). The kitchen service is mostly formed by handleless and basket-handled cooking pots, which represent a new and really popular type of vessel for the Marche between the XI-XIV c. The use of basket handle cooking pots introduced a new method of cooking by suspension over the hearth, and it is probably linked to particular ways of food preparation and dishes. The spread of this vessel is limited to the central Apennine area (Toscana, Emilia Romagna, Umbria and Marche) with sporadic finds in other regions of central-southern Italy. For this morphological class archaeometric research proved the coexistence of local productions (Esanatoglia) with extra-regional products being evidence for trade between the Adriatic regions and the Tyrrhenian area.

Therefore, even though finds from recent campaigns are still being processed, the study of the material from the area surveyed by the R.I.M.E.M. project points out to clear analogies between pottery products circulating in the inner Marche territory and the regions of central and northern Italy, with a more marked flow of exchange with central-western regions, through Umbria. This trend seems to have started already during the Roman period, persisting during the Lombard's Dukedom of Spoleto and still present well into the late Middle Ages.

## Classificazione delle forme insediative di età medievale nell'alta val di Chienti: le tipologie edilizie – Classification of settlement forms in medieval age in high val di Chienti: buildings' typologies

Viviana Antongirolami, Alessandra D'Ulizia

Keywords: Building archaeology, fortified settlement, rural housing

Parole chiave: Archeologia dell'architettura, insediamenti fortificati, case rurali

The R.I.M.E.M. Project, started ten years ago by Umberto Moscatelli, has the merit of have included also the researches on the historic buildings still existing in the landscape of the upper Chienti Valley. The building archaeology is an important discipline, crucial for a deeper knowledge of every historic and landscape context. The many Medieval and Post medieval architectural remains that our research pointed to, represent a distinctive element of the hilly and mountain landscape in upper Chienti Valley.

Our work has produced for the first time a critical and general look to these remains, useful to create the basis for a large cataloguing of the historic architecture, never undertaken, before, within the examined area. The summary work starts from the outcomes of a first classification, enriched with new elements resulting from a further census, that had the advantage to have been carried out on fortified settlements, defensive buildings, rural housing, and infrastructures linked to ancient and medieval road networks.

The methodological approach is based both on fieldwork research and on a systematic study of documentary and archive sources like the notary deeds, often difficult to be read but rich of information. The need of firm chronological elements, necessary to date the building phases, is even more important in this context because of the lack of medieval archaeological excavations.

The classification of building techniques has also included several significant Romanic monumental complexes, strongly characterizing this inland landscape; our purpose is to elaborate a mapping as large as possible of Medieval building techniques, and to point out some possible similarities between military and civil buildings, recognizing chronological markers. In fact we noticed some recurring features, such as, first and more evident among all, the site location, mostly isolated and dominant. Sometimes the fortified sites are positioned in such a way as to ensure the mutual visibility, as to enhance the whole fortification system. The registered building techniques, show the constant use of stone as main building material. In most of the examined cases the stone used is the one locally available. This can suggest that people living in those areas, even if far from each other, would have adopted a similar parameter in the choice of building materials.

The creation of the atlas confirmed the five typologies of building techniques previously classified (D'Ulizia 2010). Also for the areas analyzed in this case, has been noticed the complete absence of technique 1 (irregular without courses), while the main part of the wall structures is realized with: faces in a quite regular technique with the use of local stone, elements not carefully finished and organized on courses tending to a certain horizontality (technique 2). This technique describes therefore the average level of the buildings. The identification of several subtypes reveals specific and peculiar ways of building with the application of different patterns, but always in accordance with a main and specific building tradition.

Occasionally we noticed the use of the technique number 3 (horizontal courses), while just in one case (San Benedetto de cripta saxi latronis) the more technically careful typologies (techniques 4 and 5), that commonly characterize religious settlements, have been recognized.

## Archeologia dei paesaggi montani in Basilicata: una ricerca integrata nel territorio di Calvello, PZ (Basilicata) – Archaeology of the mountain landscapes in Basilicata: an integrated research in the Calvello territory (Potenza, Basilicata)

Dimitris Roubis, Francesca Sogliani, Nicola Masini, Valentino Vitale, Giovanni Leucci, Enzo Rizzo

Keywords: Archaeological survey, Landscape Archaeology, Medieval archaeology, San Pietro of Cellaria monastery, geophysical prospections

Parole chiave: Ricognizione archeologica, archeologia del paesaggio, archeologia medievale, monastero di S. Pietro di Cellaria, prospezioni geofisiche

The territory of Calvello (Potenza) is located in the heart of Lucanian Apennine mountain, in the northwestern part of Basilicata. The site of Calvello, about 40 km south of Potenza, is situated on a hill high 795 m a.s.l., on the northern slope of Volturino Mount. On the slopes of the hill flows the creek 'La Terra', a tributary of Camastra river, which divides the main site from Sant'Antuono hamlet, which has spread out of the walls in the Late Middle Ages. The entire territory is characterized by a rich cultural, archaeological and monumental landscape, mostly unknown, which requires a huge program of study, conservation and highlighting. In this direction, in 2013 it was launched a research project, sponsored by the local administration and carried out by the Post graduate School of Specialization in Archaeological Heritage of Matera (University of Basilicata) and by the Institute for Archaeological and Monumental Heritage (IBAM) of CNR, seat of Potenza, aimed at deepening the knowledge of this landscape and to implement actions of usability and dissemination of data.

The first action has been directed to a portion of territory in S. Pietro mountain area (840 m a.s.l.), in which, already in 2010 the Superintendence for Archaeological Heritage of Basilicata has detected some evidence relating to rural settlements dated to the end of 4th – beginning of 3rd century BC. The same area includes a Benedictine monastery, dependent on the Congregation of St. Mary of Pulsano (Gargano, Apulia), named S. Pietro of Cellaria, dating back to the 12th – 14th century, now almost completely in ruins. The investigation, developed during the years 2013-2014, concerned primarily of intensive archaeological survey campaigns, developed in the areas around the monastery; most of the settlement framework testifies to a life stage framed between the 4th and 3rd centuries BC, characterized by a network of rural sites related to agricultural and, above all, pastoral activities: some of them seem to indicate a close relationship with the use of rich springs and of mountain road paths. The study of written sources and literature on the monastery of S. Pietro has been followed by photographic and relief campaigns,

and by the analysis of the architectural and building techniques, aimed to clarify the construction phases. The only preserved part of the medieval monastery is the church; in order to understand the possible presence of buried structures related to the ancient monastery, preliminary investigations have been carried out with an intensive campaign of geophysical prospections and of aerial and topographic plans for editing the digital maps of the area. The contribution of geophysical activity of preventive archaeology consisted in the integration of two methods of geophysical prospection: geomagnetic and geo-radar (GPR). The geomagnetic prospection was conducted on three areas (M1, M2 and M3) located to the north, west and east of the monastery. The area to the north (M1) was also the subject of GPR prospection. Geophysical investigations were primarily aimed at identifying anomalies in the immediate vicinity of the monastery, related to the presence of underground wall structures (M1 and M2). A further objective was the acquisition of information about any other archaeological buried presences, since that the monastery is located in an area with a long human presence as demonstrated by intensive archaeological survey carried out in the area surrounding the medieval monastery.

## Paesaggi monastici della Basilicata altomedievale – Monastic landscapes of the Early Medieval Basilicata

Francesca Sogliani

Keywords: Settlement evolution from late-antique to the Medieval period, Medieval archaeology, monastic settlements, geography of power

Parole chiave: Evoluzione dell'insediamento dal tardoantico al Medioevo, archeologia medievale, insediamenti monastici, geografia del potere

The studies on early medieval and medieval landscape of Basilicata drawn from documentary and archaeological sources, have been focused recently on the settlement transformations of the territory. Previous systems of land management, consisting of a few urban centres and rural villas that retain their structure, while offering some significant changes at times, until Late Antiquity, were replaced by new realities starting from the 8th c.: new urban centres, fortified sites, villages and rural churches and monastic settlements. These last, both Latin and Greek, will play a key role in the exploitation of the resources of rural areas as well as in the reorganization of the demographic and economic structure of the region, in the aftermath of the political conflicts and institutional crisis represented by the greek-gothic war and power struggles between the Lombards, Byzantines and Normans.

Written and archaeological sources describe a region characterized by an extensive wooded landscape, heavily exploited already during the 10th c. and up to the Angevin period and by an hydrographic network which was an "important unchanging environmental factor" for the territory governance, affecting the communication system, the economy and the survival of populations. These aspects are set in a geographical grid, marked by a pronounced geomorphological variety, condensed into a rather limited distribution area (9992 square km).

The mountainous western portion (47%) consists of the southern foothills of the Apennines, which have here a morphology with ridges of different altitudes, varying between 1500 and

2500 m. They are placed transversely between the two coastal areas and an east hilly portion (45%) generated from the ditch of Bradano river, which is configured, in the direction of the Ionian Sea, in the region of Murgia of Matera to the north and in the plains of Metaponto to the south (8%).

The “geography” of power in the territory of Basilicata during the early Middle Ages, following the riots and insecurity period marked by the Greek-Gothic conflict and by the Lombard occupation, is divided, with uncertain and fluctuating boundaries, into a north-central side under the Lombard control and a south-east side under the Byzantine area of interest.

The comprehension of the political and administrative subdivisions of the region is often conditioned by sudden changes of institutional powers, caused by military victories or agreements of political expediency, and moreover by the impact of the phenomenon of “acculturation”, often used to state the “belonging culture” of structures and artifacts.

In this view, it was precisely the inland areas to accommodate much of the monastic settlements and to benefit from their activities, through the establishment of new settlements, the works of deforestation and the transformation of uncultivated fields, and the revitalization of the secondary roads network.

As part of a recent research project on the transformation of the late-antique and medieval settlement in the inland areas of Basilicata, conducted according to written and archaeological data, the analysis of the monastic foundations showed a rich and articulated framework concerning the extension of the territorial possessions and rights, together with the material evidence of a revitalization of many land areas between X and XII century. This transformation occurred also inside the inland territories, far from the main thoroughfares of the region, due to the civilians under the control of the monasteries, and then they reveal their role of landowners.

## L'acqua come fonte di reddito e di discordia. Le pertinenze dei monasteri di S. Maria del Sagittario e San Nicola in Valle: opifici idraulici nella media valle del Sinni durante il medioevo – Water as a source of income and discord. Appurtenances of the monasteries of S. Maria del Sagittario e San Nicola in Valle: hydraulic factories in the middle valley of Sinni in the Middle Ages

Valentino Vitale

Keywords: Archaeology of Production, Building Archaeology, Medieval Archaeology, Hydraulic Factories, Medieval Mills, Monasteries

Parole chiave: Archeologia della produzione, archeologia dell'architettura, archeologia medievale, opifici idraulici, mulini medievali, monasteri

This paper examines the spread of water mills in Italy during the Middle Ages, trying to define its historical development, the technology and the architecture. The hydraulic factories have conditioned for centuries the life of the settlements, as tools able to transform

the hydraulic energy into mechanical energy. The image of the medieval city we have in our minds, borrowed from the iconography of the time and from city centres still visible, is associated with a number of elements that characterize and identify it as follows: defense walls, towers, cathedral, palaces, narrow, winding streets. The presence of water in the Middle Ages exploited for a multitude of uses: irrigation, waste disposal, water supply for watering the animals and to feed the fish ponds; the use in the production processes (for tanning hides, brick making, etc.); the production of hydraulic energy for various activities (flour mills, fulling mills, oil mills, etc.). The latter was used for the first time in the handling of the grinders for grinding cereals, after which for centuries that operation was accomplished by exploiting the muscular strength of animals or men.

Great importance was given to the ownership of the mills that ensured a considerable income from the payment of the right of ground which were applied to the locals. The right of ground along the river Sinni (southern Basilicata) and the right to exploit the waters of its tributaries (Frida, Rubbio) gave rise to long disputes between the monastic settlements and the lords of the nearby towns. In addition, in order to encourage the population of the monastic lands, being predominantly mountain territories in the Apennines of Lucania, and to allow a certain community life in the countryside, numerous tax privileges and concessions were granted to the inhabitants of these places.

In the works that deal with hydraulic factories, the area of investigation is almost always an entire river basin or a part of it. It is right near one of the tributaries of the river Sinni that the abbey of Santa Maria del Sagittario, as well as other monasteries in the same valley, contributed so determined to economic and social recovery after the economic crisis and the strong demographic depression that seems to have characterized this area between the late antiquity and the early centuries of the Middle Ages. Some data suggest that the moment of greatest numerical expansion of hydraulic systems in Europe occurred between the end of the twelfth and thirteenth century, in correspondence with a time of economic prosperity and especially of strong population growth. Practically all the mills in the Middle Ages were attributable to monasteries: this depends primarily on the fact that most of the written documentation of the period is of monastic origin. To this is added the consideration that to install plumbing it was necessary to be in possession of water rights and especially to have labor and considerable economic resources, since the construction of a structure as expensive as a mill entailed heavy investments.

The contribution, by investigating topographically the slopes of Mount Caramola, northern foothills of the Pollino massif, focuses on a specific analysis of hydraulic factories of these places. In short, it proposes the reconstruction of the scenery of settlement and the understanding of the dynamics of exploitation of lands and of resources in an inland area already so severely depressed, dominated by woods and uncultivated land. Holders of this economic power during the XII-XVI cent. AD, were the Cistercian monastery of Santa Maria del Sagittario and the Certosa di San Nicola in Valle, foundations willed by the families Clermont and the Sanseverino, Counts of Chiaromonte. In Basilicata, and in the valley of Sinni in particular, until the abolition of feudalism, water rights were exercised by the landowner or the monasteries that had acquired the concession. The water was certainly one of the greatest treasures of these valleys, and probably one of the factors that most engraved on the physiognomy of the specializations of this productive area.

## Archeologia montana e archeologia delle risorse ambientali: approcci “marginali” di studio alle aree montane italiane nel periodo post-classico – Mountain Archaeology and archaeology of environmental resources: “marginal” approaches to the study of Italian mountain areas in the post-classic age

Anna Maria Stagno, Carlo Montanari

Keywords: environmental archaeology, historical ecology, environmental history, palaeoecology, Italy

Parole chiave: archeologia ambientale, ecologia storica, storia ambientale, paleoecologia, Italia

The paper addresses a critical discussion on the state of the mountain archaeology, a field of investigation concerning particular subjects which are at the margins of current research in Italy, in connection also with other European contexts and with the archaeological research on settled spaces and the historical ecology. The introduction provides an account of the variety of interpretative nuances concerning the term ‘environmental archaeology’ (whether it could be only referred to the study of ecofacts from archaeological excavation, or also of its own peculiar sites) and – through an attempt of historiographical retrospective – discusses on the relations (past, current or possible) between the different research approaches, focused on one hand in the study of the problems of the off-site environmental archaeology, and on the other, of the on-site archaeological ones.

An Italian delay must be recognized in the elaboration of original approaches of environmental archaeology, which could be considered the most suitable tool for the development of the mountain archaeology. Nevertheless in Liguria, thanks to the pioneering research of Tiziano Mannoni, and the convergence with the area of historical geography which was interested to the history of rural population, the birth of medieval archaeology (enshrined in the 1974 by the founding of the journal «Archeologia Medievale. Cultura Materiale, Insediamenti, Territorio») has been permeated by geographical and historical issues and by a multidisciplinary approach. This perspective – even if not developed by the Italian Medieval Archaeology which during the 1980s was consolidated around the settlements studies (above all, the urban ones) – remained alive in the historical-geographic vein, which then met the British historical ecology of Oliver Rackham (Moreno et al. 1982, Moreno 1986). Though the Italian medieval archaeology has never completely abandoned the study of rural areas, for a long time it was above all an archaeology of rural settlements (and most rarely of the mountain ones), and not an archaeology including also the study of the “used spaces” (which include not only the settled territory, but also the areas where the communities exploited the environmental resources), as defined by Riccardo Francovich (Francovich, Valenti 2001). Therefore, the interest for environmental topics have long coincided with the study (archaeozoological, archaeobotanical, archaeometrical, anthropological analysis) of biological remains from samples collected in archaeological excavations of settlements (Quirós Castillo 2014, Milanese 2014).

The need of a more complicated approach to the study of rural areas emerged with force to the post-classical archaeology by the development of the post-medieval archaeology,

after the Sassari conference and the foundation of the Journal “Archeologia Postmedievale” (Milanese 1997). The attention for this issue is almost unavoidable for the post-medieval archaeology since traces of the agrarian and pastoral arrangements are richer than for any other age. Moreover, this has a deep methodological significance, considering the close relations that Italian post-medieval archaeology has had and currently has with that area of Italian historical geography which practices historical ecology and environmental archaeology. The numerous invitations «to face in a specific way the study of the “ecofacts” – i.e. the archeological evidence of the history of the environmental resources – in relation with the site (or the area) interested by the field observations» (Moreno 1997) must be seen in this context.

If, for the Italian medieval archaeology, it is possible to speak of a recent comeback to the study of mountain areas, it must be noted that these areas have been since a long time studied by pre- and protohistoric archaeologists who – through different approaches – have aimed to analyse the issues of their management and exploitation (not only of the human settlement). Just in those research projects, above all since the Seventies, a large number of investigations were carried out, which involved not only archaeologists, but also palaeoecologists. Precisely thanks to these investigations the debate on the archaeology of mountain spaces, on its methods and its peculiarities has been restarted (or started) with a multidisciplinary and diachronic perspective. Nevertheless, in comparison with other European experiences, to date a perspective on the reconstruction of the history of the landscape which considers the interest of the study of the environmental effects of the management practices of environmental resources – and which therefore considers as possible archaeological sites also the ones of palaeoenvironmental investigations, such as wetlands, or of the historical ecology, such as vegetation cover – is scarcely practiced in Italy. As it is generally known, such kind of archaeological-environmental approach to rural artefacts, and to mountain areas was developed, for nothing or little, in the archaeological research, while it was addressed in the framework of micro-history and historical ecology, which were for a large extent nurtured by the approaches of the British local history.

The path of the archaeology of environmental resources as defined and developed in the researches of the Laboratory of Environmental Archaeology and History of the Università di Genova (to which the following paper is dedicated) is apparently isolated from other paths of the archaeological and environmental archaeology research; however, as discussed above, it has a long history of dialectic relation with the medieval archaeology, it is strictly connected with the development of postmedieval archaeology, and it has grown up also thanks to the contribution of the environmental archaeology. This path has developed again in Liguria, and it has maintained uninterrupted links with the practice of the archaeological research of Tiziano Mannoni, who kept alive the geographical-historical dimension which characterized the first phases of medieval archaeology in Italy. This approach, which developed over three decades of research, it is perhaps the result of numerous disciplinary contaminations, starting from the research on the history of the agrarian landscape of Liguria, in the Seventies. Contaminations that were fed by more or less formalized collaborations with other European research groups, within common research projects. This practice of research has developed outside and at the borderline of codified disciplines, in a spirit that now seems very close to the one which has characterized the season of the history of material culture.

## Archeologia delle risorse: tra archeologia ambientale, ecologia storica e archeologia rurale – Archaeology of resources: between environmental archaeology, historical ecology and rural archaeology

Carlo Montanari, Anna Maria Stagno

Keywords: archaeology of environmental resources, historical ecology, archaeobotany, rural archaeology, topographic approach, multi-disciplinarity, Ligurian Apennines

Parole chiave: archeologia delle risorse ambientali, ecologia storica, archeobotanica, archeologia rurale, approccio topografico, multidisciplinarietà, Appennino Ligure

The sources examined and the adopted approaches to their study in historical ecology varies and oscillates depending on the particular subject of research. Oral sources or archival documentation can be explored for their material evidence (from the document to the terrain), whilst structures and artefacts collected in the field can be traced back to archival and oral sources (from the terrain to the document). Research on the history of the agricultural landscape has been conducted at the University of Genoa since the 1970s, investigations that have been enhanced by developing interests in micro-history, historical ecology, geobotany and finally environmental archaeology. Since the mid-1990s, the Laboratory of Environmental Archaeology and History (LASA) at the University of Genoa has undertaken a series of systematic research programmes concerning the history and archaeology of environmental resources in the Ligurian mountains, and the application of subsequent findings to the management and planning of environmental and cultural heritage. These historical-archaeological-environmental investigations contributed to the formulation of proposals that seek to promote the local management of historical-environmental resources; the 're-authoration' of local actors.

Investigations were conducted throughout Liguria in northwest Italy, particularly in the east of the region. The study sites are located in areas that were, until at least the end of the nineteenth century, used in the transhumance routes that linked coastal winter pastures to the summer mountain pastures in the hinterland. Animal breeding and husbandry was a fundamental component of the local economy of coastal area, as well as those of inland areas. A number of different and complimentary sources are drawn upon in the research of Ligurian environmental archaeology and history. The investigations conducted by geographers, historical ecologists, archaeologists, geologists, botanists and archaeobotanists are characterized by i) regressive analysis, starting from the analytical assessment of effects of practices (and their abandonment) on the present vegetation and therefore on the formation of the landscape; ii) the recognition of the 'status' of sites of historical-archaeological-environmental interest so as to trace of the role of human action and the recording of pertinent, related evidence; iii) a close dialogue between the various research components and respective disciplinary procedures related to the establishment and maintenance of equivalence between sources. Twenty years of research and teaching has made it possible to develop and elaborate approaches to different general analysis contexts (e.g. mountain wetlands as biostratigraphic archives, woodland archaeology, herding) and to identify and reconstruct specific practices of resources management (e.g. production of charcoal, grazing in the terraces, use of controlled fire, temporary crops, wooded pastures etc.) and the related

ecological, archaeological and archaeobotanical indicators. The case-studies were selected from those in which the archaeological sources have been most thoroughly tested and are considered the most significant in terms of the intersection of sources.

*Permanent grassland, permanent crops and usurpations:* the study area is located in Alta Val Trebbia (Genoa) and is part of a SCI (Site of Community Importance). The area is characterized by the presence of vast tracts of common land. Surveys were conducted on the historical pasture sites and/or those in which the watering of cattle took place. Archival research focused on the study of a centuries-old dispute between families in Fontanigorda and Casanova concerning rights to use portions of the territory. Interviews with current stakeholders recorded memories of particular practices in the management of wet meadows located above 1000 m asl. Archaeological investigations conducted in the wetlands documented the presence of water regulation methods and practices, such as dams and filtration walls, the analysis of the current cadaster indicating the presence/absence of enclosure walls corresponding to differences in the state of properties of these areas. The comparison of palynological and notary sources revealed the complexity of nineteenth and twentieth century agricultural phases, that whilst often underestimated, the deciphering of which is central to the reconstruction of the current landscape.

*Woodland archaeology. Wooded grassland and grazed woodland:* the disappearance of the wooded grassland landscape resulted from a type of plant resource management that, whilst very common in the past mountain economy, is now abandoned, together with wild breeding. Until the end of the nineteenth century, this multiple use of resources ensured the provision of pasture, forage grass and leaves, wood and fruit (chestnuts, acorns, beechnuts, hazelnuts, apples and plums and, in coastal areas, even olives). In addition, sometimes, temporary sowing cycles were sometimes performed. In the Regional Forest of Gerbonte (1000-2000 m asl – Prov. Imperia), the study began from dendrochronology, flanked by the palynological and anthracological analysis of soil and archival research concerning the history of the entire slope, forest management, and the vicissitudes of the companies responsible for the cutting of trees. A further case-study concerned a newly formed beechwood at about 1300 m asl in Val Trebbia, populated with centuries-old pollarded beeches. Historical ecology observations on the floristic composition and the consequences of the cultural practices of these ‘plant monuments’ were followed by cartographic analysis, archival research, soil pollen analysis and dendrochronology.

*Temporary agriculture and use of fire:* within the wider context of use of woodland as pasture, controlled fire practices in wooded areas so as to rejuvenate the herbaceous layer (*fornaci, ronchi*) were widespread throughout the Apennines until the late-nineteenth century, and became more sporadic during to the mid-twentieth century. This practice was evidenced by oral and documentary sources, place names, historical maps and now also biostratigraphic evidence. The archaeological excavation of piles of stone clearance, soil profiles, anthracological, pollen, micromorphological and soil analyses permitted the identification of traces of temporary agriculture similar to the *ronco* practice dated to the seventeenth-eighteenth centuries. The so-called ‘alnocultura’ is a particular historical-environmental system which consisted of cycles where copses of alder (in the mountain belt, *Alnus incana*) were first grazed and then subjected to *ronco* and planted with frugal cereals (rye, oats) for a few years. Investigations have made it possible to recognize possible pollen indicators of this practice.

*The management of agro-forestry-pastoral resources from the sixteenth to the twentieth century:* based on architectural archaeology investigations, studies in the Aveto valley, in

the area surrounding the hamlet of Ventarola (845 masl, Rezzoaglio, Genoa), have made it possible to outline the organization and function of breeding spaces (built or not) both inside and outside of the village from the sixteenth to the twentieth century. The changes appear to be attributable to demographic modifications and those of the road network, as well as to local environmental resource management practices, such as changes from transhumant goat and sheep breeding to a sedentary cattle husbandry system, and from a multi-resource to mono-cultural management system that emerged clearly from the analysis of statistical sources and historical cartography.

*Historical ecology of terraced areas of coastal mountains. The case of the Cinque Terre:* the analysis of documentary sources (current and historical maps, land registers and land estimi, iconography) and observational sources (current flora and vegetation, dendroecology) associated with soil pollen analysis revealed a disappeared landscape comprised of a mosaic of grasslands that were grazed until the nineteenth century. These areas were the 'grassy corridors' of transhumance along the Apennines ridges, and provided access routes to winter grazing in the terraces occupied by specialized crops (olive groves, vineyards, orchards, vegetable gardens). Pollen diagrams clearly identified a phase of agricultural and pastoral activities that were characterized by a scarcity of trees and an abundance of either spontaneous or cultivated herbaceous species. The most recent levels of the pollen diagrams detail a post-cultural phase in which herbaceous, light-demanding species decreased significantly in tandem with the spread of spontaneous shrubs and trees.

Finally, these investigations show that the naturalistic value of these sites, a value that has often resulted in the protection of these areas, is linked to specific historical environmental resource management practices. The evidence of these practices is still recognizable (ecofacts and artifacts) through a local analytical approach, within which further discussions and dialogues concerning the production of new sources for historical ecology and historical geography, archaeology and archaeobotany are possible and pertinent.

## Late Würm and Early-Middle Holocene Environmental Change and Human Activities in the Northern Apennines, Italy – Cambiamenti ambientali e attività umane negli Appennini settentrionali (Italia) durante l'ultimo Würmiano e l'Olocene Inferiore e Medio

Nicholas P. Branch, Lionello Morandi

Keywords: Pollen, Vegetation, Climate, Archaeology, Apennines

Parole chiave: Polline, Vegetazione, Clima, Archeologia, Appennini

Palaeoecological studies in the northern Apennines (embracing the regions of Liguria, and parts of Tuscany and Emilia-Romagna) have enabled reconstruction of the main patterns of environmental change from Late Würm Late Glacial to the end of the middle Holocene. The data generated by the palaeoecological study of the upland mire of Rovegno (812m asl; Liguria) indicates that prior to 17,056-16,621 cal yrs BP until 15,099-14,501 cal yrs BP sediment was deposited in a freshwater lake and sedge-swamp with dryland vegetation characterised by open *Pinus* woodland, *Artemisia* dominated grassland, *Juniperus*

shrubland within an arctic-tundra, steppe or semi-desert environment during the late Würm glaciation. The presence of *Pinus* woodland prior to 17,056-16,621 cal yrs BP at Rovegno is particularly interesting and suggests the onset of 'warmer' climatic conditions following the last glacial maximum. In contrast, the decline of *Pinus* at approximately 17,056-16,621 cal yrs BP suggests the renewal of colder conditions, and may be provisionally equated with the North Atlantic Heinrich 1 (H1) rapid climate change event. From 15,099-14,501 cal yrs BP to the onset of the Holocene at ~11,700 cal yrs BP was characterised by the establishment of *Betula* and *Pinus* woodland, and the expansion of thermophilous taxa, namely *Abies*, *Corylus* and *Quercus*, during the Late Würm Lateglacial Interstadial. The paucity of *Abies* in the Lateglacial pollen data from Rovegno is perhaps the most important contrast with other sites, and may be explained by differences in elevation and proximity of glacial refugia. The decline of *Pinus* woodland sometime after 13,387-13,163 cal yrs BP, and increase in *Betula* and *Artemisia*, at Rovegno may possibly be equated with the Late Würm Lateglacial Stadial ('Younger Dryas'). The absence of a clear expansion of herbaceous taxa in the pollen record, however, suggests that the event is poorly represented. In contrast, at other sites, such as Prato Spilla 'C', the event is clearly marked by the decline of *Quercus* woodland, and the expansion of herbaceous taxa. The return of colder climatic conditions at this time has been recorded in several lake sequences in the Mediterranean and Italy.

During the early Holocene, the dryland vegetation comprised mixed coniferous and deciduous woodland dominated by *Quercus* with *Abies*, *Fagus* and *Corylus*. *Fagus* woodland becomes established at Rovegno sometime before 6488-6318 cal yrs BP, but never becomes a major component of the woodland cover. At higher elevation, mixed deciduous – coniferous woodland, comprising *Abies* with *Pinus*, *Betula*, *Fraxinus* and *Quercus* dominated. At Rovegno, the 'abrupt' nature of the '*Corylus* rise' suggests that it occurred following a hiatus in sedimentation during the earliest Holocene. The timing and duration of the hiatus remains uncertain. Although the cause of the '*Corylus* rise' has been attributed to climate change, distance from glacial refugia, and the migration rate of *Corylus*, competition or Mesolithic human activities, the data from Rovegno add very little to the current debate. For the remainder of the early Holocene, *Abies* dominated the upland zone of the Northern Apennines, forming a mixed coniferous-deciduous woodland cover with *Quercus*, *Tilia*, *Ulmus* and *Corylus*, whilst at Rovegno there was a higher proportion of *Quercus* within the *Abies* woodland and the increasing presence of *Fagus*.

The onset of the Middle Holocene was marked by contrasting vegetation patterns in the upland zone of the Northern Apennines: (a) a sustained reduction in *Abies* woodland, (b) a temporary decline in *Abies*, (c) the persistence of *Abies*, and (d) the broadly synchronous expansion of *Fagus* woodland. This general pattern coincided with increases in *Quercus* and *Corylus*, and herbaceous taxa (e.g. *Plantago lanceolata*), and a reduction in *Tilia*, *Ulmus* and *Fraxinus*. At Rovegno, *Fagus* woodland was already well established, which is consistent with many lower elevation sites, whilst *Quercus* became increasingly dominant over *Abies*. The presence of *Fagus* from 6488-6318 cal yrs BP at Rovegno confirms that this taxon colonised mid-altitudes prior to its major expansion at higher elevations from ~6000 cal yrs BP. From ~6000 cal yrs BP, *Fagus* formed mixed *Abies-Fagus* woodland across the upland zone of the Northern Apennines, which coincided with further reductions in *Ulmus*, *Tilia* and *Fraxinus*, increases in herbaceous taxa (e.g. *Plantago lanceolata* and Poaceae), as well as *Carpinus* and *Ostrya*. At lower elevations, such as Rovegno, *Quercus* became dominant, with *Fagus* only forming a minor component of the woodland cover. The period from ~4700 cal yrs BP to the end of the middle Holocene (~3000 cal yrs BP) records a

further major change in vegetation succession with the beginning of a sustained reduction in *Abies* woodland, and an overall increase in *Fagus*, which suggests dynamic changes in the composition and structure of the woodland cover.

The decline of the main woodland taxa at many sites was accompanied by occasional evidence for soil erosion and a general increase in non-arboreal taxa; this commenced during the Early and Middle Neolithic (~7800-6100 cal yrs BP), and continued during the Late Neolithic (~6100-5800 cal yrs BP), Copper Age (~5800-4200 cal yrs BP) and Bronze Age (~4200-2900 cal yrs BP). Although these changes are often associated with the spread of agriculture in many parts of Europe, the palaeoecological evidence for human activities at mid and high elevations in the Northern Apennines remains equivocal. Therefore, the application of standard criteria for inferring human impact on the environment using palaeoecological data, such as woodland clearance, biomass burning and soil erosion remain uncertain. Additional methods must therefore be routinely employed in northern Apennine research to avoid ongoing circular arguments, such as non-pollen palynomorph (NPP) analysis, especially coprophilous fungal spores. At Prato Spilla 'A' (Emilia-Romagna), previous pollen analysis has inferred two episodes of human interference in vegetation succession during the Middle and Late Neolithic. The low values of coprophilous fungal spores across both of these events suggests, however, that there is little or no evidence for human activity associated with pastoralism, and instead the dung spores could be ascribed to wild mountain herbivores, most likely ungulates and lagomorphs. The fungal data suggest, therefore, that greater caution must be used when interpreting human activity based upon pollen data alone.

## Basque Cultural Landscapes of the Western French Pyrenees – Paesaggi culturali Baschi dei Pirenei Francesi occidentali

Ted L Gragson, David S. Leigh, Michael R. Coughlan

Keywords: Pedogenesis, Agropastoralism, Pyrenees, Multiproxy, Basque

Parole chiave: Pedogenesi, agropastoralismo, Pirenei, Multiproxy, basco

In this article we use multi-proxy evidence to examine human domestication of western Pyrenees mountain landscapes (>800 masl) over the course of the Holocene from research carried out in the ethnically Basque commune of Larrau (Département de Pyrénées Atlantiques, France). Our data suggest that native forests of the western Pyrenees were transformed to pastures several thousand years ago with no significant degradation of the soil. Heritage agropastoral landscapes such as those in Larrau provide a rare opportunity to examine a slow-changing coupled system in which human management activities across millennia have structured the scenic landscape, created a resilient and durable agropastoral production system, and redirected the underlying pathways and mechanisms of pedogenesis.

Human-induced pedogenesis across the millennia has direct consequences for contemporary rates of sediment accumulation, organic matter decomposition, and soil hydrology. They also relate to human decision-making about desired environmental end-states and sustaining rural livelihoods. The marginalization of agropastoral activities, however, leads to out-migration and land abandonment, and evidence indicates such “human-made” landscapes rapidly degrade once they are no longer subject to agropastoral use and management. The

composite Holocene history of the western Pyrenees provides ample evidence that the “natural” vegetation at present results from the coupling of edaphic conditions in response to climatic oscillations and human agropastoral activities.

The Larrau landscape has been organized into private-communal areas across broad physiographic zones and stable since at least ca. AD 1200, while the stem family household was the fundamental decision-making unit that structurally linked one house to other houses through institutionalized commodity and non-commodity relations. The stem family grew out of the need to maintain the integrity across time of a family’s estate, most notably land and buildings. Membership in a household was not only the basis for management practices on private lands it was also the basis for usufruct rights to communal lands and the management practices occurring on them. The division of the Larrau landscape into private and communal lands serves as the nexus between the scalar organization of society into households, neighborhoods and commune, and the discrete management practices at particular kinds of sites capable of influencing and directing pedogenic processes.

Detecting residual human influences has increased ecological awareness generally of how human land use can disturb ecosystems. The singular focus on the onset of agropastoralism, however, fails to reveal the causal processes afforded by a place-based approach to the processes that unite humans to their biophysical environment. How systems progress and regress, how feedbacks link fast and slow processes, and how alternate steady states can co-exist are key elements to the sustainable management of human-dominated ecosystems. They are also central to understanding how the agropastoralism in the western Pyrenees has shaped the present majestic landscapes and their unique soils. Research into the co-evolution of agropastoralism and soils in the western Pyrenees connects the present continuously and strongly to its past, and this information is necessary if we are to engage contemporary land systems and leverage knowledge and practice across multiple scales to achieve a more desirable and sustainable future.

## How to identify pastoralism in Prehistory? Some hints from recent studies in Veneto and Friuli Venezia Giulia – Come identificare la pastorizia nella Preistoria? Alcuni suggerimenti da studi recenti in Veneto e Friuli Venezia Giulia

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Keywords: Archaeology of pastoralism, direct/indirect indicators, mountain/plain, prehistory-protostory, Veneto /Friuli Venezia Giulia

Parole chiave: Archeologia della pastorizia, indicatori diretti/indiretti, montagna/pianura, preistoria/protostoria, Friuli Venezia Giulia/Veneto

Theoretical essays and applied studies on the archaeology of pastoralism have increased over the last 30-40 years. A key element in almost all is the identification and interpretation of sites, activities and artefacts connected with pastoralism, traditionally based on the combination of direct and indirect indicators from different fields: archaeology, ethnoarchaeology, ethnology and ethnography, history, archaeozoology and palaeoenvironmental studies, plus sedimentology, soil micromorphology and soil chemistry. At a closer, comparative analysis,

these fields are more or less valid, as briefly discussed in the theoretical introduction and as results from the interdisciplinary studies focused on prehistory and protohistory carried out – independently, with different methodologies – in two close regions, Veneto and Friuli Venezia Giulia, since the 1980s. The comparison of these experiences allows to evaluate potentialities and limits of the tools used in areas where the plain and the mountain have always played a complementary role.

In Veneto studies on pastoralism date back to the 1980s. The archaeological reconstruction was preceded by ethnographic, geographic and historical studies, that allowed the detection of a series of different pastoral movements since the IX century a. D. continuously until the present, that variously combined the resources offered by the environment, exploiting five different grazing areas: the wetland of the low Po plain, the drier pastures of the high Po plain, the *Brometum* of the hillzone, the *Trisetetum* of the prealpine zone up to the summer *Seslerieto-Semperviretum* of the highlands. The archaeological study suggested a significant development of ovine rearing in the Middle-Final Bronze ages, when the lowland agricultural settlements were involved in pastoral movements to the highlands, were the first defended sites seasonally controlled the grassland key areas. In the 1990s an ethnographic and ethnoarchaeological study proved the presence of shepherds in the low plain of Verona and Rovigo. The last shepherds were interviewed and followed in their activities, and four different pastoral groups were recognised. The study suggested that exotic materials found in the lowland could reflect pastoral movements, which seem strongly connected with the physical peculiarities of the reared animals.

Since 2005 an ethnoarchaeological research project was undertaken by an interdisciplinary team in the Lessini highlands: hundreds of abandoned pastoral buildings were detected, registered in db collecting their features, and put on a map thanks to GPS technology. A GIS was realized using ArcView GIS 9.0 software. A typology of the buildings divided them into three main types: sheep folders, shepherds' shelters and breeders' houses. The survey demonstrated that seasonal pastoral activities leave on the ground ephemeral traces, the best built buildings being devoted to cheese maintenance. The project also helped in detecting the pastures more used in time: they are both not interrupted by rock outcrops and easy to reach from the plain or valley bottoms along routes used also in historical times. These good pastures were controlled by the protohistoric defended mountain sites, as demonstrated by cost analysis and Thiessen Polygon analysis.

The difficulty in detecting sure traces of past pastoral activities led also to the application of studies of soil chemistry to possible pastoral sites, with significant results in recognizing buildings devoted to recover animals and pastoral roads.

In the Trieste Karst studies on pastoralism started at the end of the 1990s. The first sedimentological and soil micromorphological analyses of cores preserved from old excavations in Edera cave were published in 1997; similar analyses (Azzurra, Caterina, and Lonza caves) followed in 2000, combined with the re-examination of the contextual cultural materials. *Fumier* layers of two types – *facies* 3: layered heaps of ashes and charcoal; *facies* 4: homogeneous brownish deposits – were identified in post-Mesolithic deposits of these sites and, indirectly, of others: all are coprogenic, i.e. made up of thoroughly disaggregated and burnt herbivore droppings, mostly of sheep/goats. On these grounds it was inferred that caves were used with more (*facies* 3) or less (*facies* 4) frequency by groups of shepherds to stable their flocks: the scarcity of artefacts would further support the interpretation of caves as *grottes-bergeries*. Faunal remains were available only for Azzurra, but are consistent

with those from other caves, and confirm the same reconstruction from the *Vlaška* (Early Middle Neolithic (*facies* 3) to at least the Early Bronze Age (*facies* 4). The relevance of historical and ethnographic data, already hinted at in this study, was further developed in a later one – that discussed the indicators of pastoralism, and addressed for the first time the connection between pastoral movements and the search for salt – and in two others, an Interreg IIIA Italia-Slovenia 2000-2006 project and a PhD thesis, dealing with the N and NE part of the region. Once again old data, read from a problem-oriented viewpoint, supported the hypothesis that caves (esp. Velika Jama) were used as stables along pastoral routes, indicated also by the distribution of artefacts in the territory. The parallel study of pastoralism and of path and road systems, both approached as long-term processes, identified preferential routes (largely conditioned by natural physiographical features) and distinguished between primary paths/roads, the most accessible and used, and secondary ones, often dedicated to specific purposes, such as pastoralism. The distribution of sporadic artefacts at medium to high altitudes – also in the Slovene territory, often close to modern *malghe* – would support the identification of traces of similar activities in the late prehistory, though the sporadic artefacts recovered so far are not specific to pastoral activities. On the contrary, clay spoons found in Karst caves have been directly connected with goat milk processing, on the basis first of indications given by modern shepherds – field ethnographical research was a fundamental part of the study –, then of the results of experimental chemical analyses.

In conclusion, the comparison of the studies on pastoralism carried out in the two regions stresses the multidimensional character of pastoralism, that need interdisciplinary, site- and time-specific approaches. On- and off-site research is present in these studies, that confirm the more reliability of the former, but show also the potentialities of the latter. Sedimentology, soil micromorphology and soil chemistry result of primary importance, but cannot be separated from other methods of inquiry, and in particular from ethnographic and ethnoarchaeological research carried out in the territories under study.

## Etnoarcheologia dei paesaggi alpini di alta quota nelle Alpi occidentali: un bilancio preliminare – Ethnoarchaeology of western alpine upland landscapes: preliminary results

Francesco Carrer, Florence Mocci, Kevin Walsh

Keywords: Western Alps, uplands, ethnoarchaeology, pastoral landscapes, pastoral huts

Parole chiave: Alpi occidentali, alte quote, etnoarcheologia, paesaggi pastorali, capanne pastorali

The study of the interaction between pastoral groups and mountain environments is a growing and significant archaeological research. The investigation of ancient pastoral contexts though, is biased by two main factors: the poor visibility of pastoral sites, related to the mobility of pastoral groups, and the problematic discrimination of pastoral sites and non-pastoral sites. Ethnoarchaeology enables archaeologists to overcome these limitations, by analysing modern and contemporary pastoral sites and landscapes using an archaeological approach. The purpose is to create analogical models for interpreting ancient

pastoral contexts.

The first ethnoarchaeological projects that focused on pastoralism were carried out in Africa and the Near East, while Mediterranean transhumance (in Greece, in the Balkans, in Italy and in Spain) was investigated in a second phase. The abundance of historical sources in the latter areas enabled ethnoarchaeologists to develop a diachronic perspective on traditional pastoralism. In recent decades, ethnoarchaeology has also evolved as an independent discipline, beyond archaeological analogy and toward an anthropological interpretation of human interaction with material culture (not only objects but also structures and landscapes). Ethnoarchaeological projects focused on pastoral activities are rare in the Alps, and traditional pastoralism is disappearing. In the meantime, archaeological activities in the alpine uplands have dramatically increased in recent decades. The success of this research encouraged us to establish an ethnoarchaeological research aimed at understanding how pastoral groups shape upland landscapes. The EthWAL project (Ethnoarchaeology of Western Alpine upland Landscapes) started in 2013, coordinated by Francesco Carrer and Kevin Walsh, with the collaboration of Florence Mocchi. It seeks to provide significant analogical models for alpine archaeology, as well as to be a point of reference for the study of modern and contemporary human activities in the alpine uplands. This project has two important characteristics: it is multi-disciplinary, namely it associates archaeological methods (such as survey and excavation) to ethnography, historiography, spatial analysis and soil analysis; it is multi-scalar, being focused on the spatial patterns of pastoral features in the landscape, as well as on the intra-site organization of pastoral sites.

The two study areas selected for this ethnoarchaeological research are in the western Alps: Val Maudagna (Cuneo province, Italy) and Vallée de Freissinières (Dept. des Hautes-Alpes, France). Here pastoral features have been positioned using handheld GPS and their main characteristics have been described: shape, size, preservation, etc. Local herders and farmers have been interviewed and historical documents and maps have been acquired to study the evolution of the mountain landscapes. Specific attention has been given to traditional dry-stone huts. In the Val Maudagna, some of these huts are still used by local herders as summer refuges and dairies; in the Vallée de Freissinières, instead, they are completely abandoned. One structure per study area has been selected for archaeological excavation. The analysis of the data collected in the field is still ongoing, but nonetheless the first results enable some preliminary inferences.

Firstly, the current pastoral landscapes in the two study areas seem to be the product of complex historical processes, affecting pastoral strategies and consequently the interaction between pastoral groups and mountain environment. The awareness of the historical complexity of pastoral landscapes provides theoretical and methodological means for their management. Pastoral landscapes can be promoted as touristic attractions. Also, current environmental policies could benefit from the historical reconstruction of the interaction between pastoral groups and mountain environments. This project will also have an impact on theory and methods of ethnoarchaeology and landscape archaeology. On the one level, it shows the importance of integrating different disciplines and approaches that have the potential to disentangle complex landscape formation processes. On the other level, it suggests that good analogical models for archaeology have to be based on historical reconstructions. Furthermore, it demonstrates the potential of spatial analysis in ethnoarchaeology.

## De la châtaigne l'hiver et du fromage l'été. Productions vivrières, aliments ordinaires et identité locale dans la haute vallée d'Arroscia – Sweet chestnuts in winter and dairies in summer. Food-supplying productions, ordinary food and local identity in the high valley of Arroscia

'Ada Acovitsioti-Hameau

Keywords: Rural territory, mountain space, food-supplying productions, ordinary food, valuing of everyday life, construction of identity

Parole chiave: Territorio rurale, spazi montani, produzioni alimentari, cibo comune quotidiano, costruzione dell'identità

Mots-clés: Territoire rural, espace montagnard, productions vivrières, alimentation ordinaire, valorisation du quotidien, construction de l'identité

Situated in the high valley of Arroscia, the village of Montegrosso-Pian-Latte occupies a narrow plateau dominated by the Alps. This territory goes up from the bottom of the valley (at about 500-700 m) to the highest summits (at about 2200 m) in an intermittent strip each part of which includes crop land, wood and pastures. These split and contrasted country patterns allow the exercise of an agropastoralism of subsistence all year round. This system of production persisted till the end of the 70's. It is based on cattle moves that go hand in hand, following seasons, with the sweet chestnuts' crop, the cultural cycle of cereals and fodder, the production of dairy. The socioeconomic organization leans on the existence of common use land and pastoral hamlets for mid-season and summer stays. Hamlets (Case Fascei immediately South of the village and Madonna della Neve in the Navette forest at a distance of 36 km) supply hay for the year but also wheat, barley and potatoes. In the Navette area also rye and legumes are grown. Wheat is also cultivated near the village, where are situated orchards, vineyards and kitchen gardens. Between these lands and the woodland of larches and fir-trees that borders the meadows of Case Fascei the chestnut groves are found. Thus, every place and every season are characterised by a proper timetable of activities, by specific productions and, also, by particular wild products (herbs, vegetables, mushrooms especially, game being a not ordinary food). This kind of economy becomes obsolete since the beginning of the 1990's and the changing process (not still finished) of the status of the property of land and of technical buildings (tecci, small farmhouses with premises for storage and cattle folding) mark the end of the system.

In this declining system, sweet chestnuts and dairies are added to the basis of food supply represented by cereals as much in summer as in winter : breads, pastas and pies. For sweet chestnuts, the season lasts from the mid-October to the mid-December. Except for some « castagnades » where they are roasted, these fruits are aired on sieves, over a slow fire in specific rooms or buildings. They are then stored for winter without making any flour. Breads, pancakes and pastas are prepared with the wheat flour produced in the mill in the bottom of the valley. Among dairies, there are cheese (the *túma* of one kilo coming from the first curd), the *ricotta* (coming from the second curd) and the *brussu* (fermented *ricotta*). Stay in the mountain pasture is particularly favourable to this manufacturing but the season of production can be longer and go from January (after lambing) to August. The cheese *Túma* is mainly sold, contrary to the *ricotta* and especially to the *brussu* which are consummated

daily. The cows' milk is transformed traditionally in autumn and at the beginning of the winter and it is as much sold as consummated. However, the status of cheese (curd put in shape) is awarded to *túma* cheeses of ewe milk produced on mountain pastures.

Winter symbols, sweet chestnuts are consumed in soups and porridges and serve specially as supplement food for oxen, ovine and rabbits, a breeding that assures a big part of the modest meat-based food with simmered meats, while the roasted ones connote festivities. Symbols of summer, cheeses furnish snacks and elaborate dishes: bread slices (the usual provisions of shepherds in pastures), omelets, tagliatelli et *raviore*, polenta, pies, accompanied also with aromatic herbs and diverse vegetables. Potatoes and legumes are so ordinary that they are rarely mentioned in terms of cooking. Whether in the village or in the hamlets, the part of the wild products in the family supply remains effective and essential but is considered as subsidiary and exceptional.

The traditional economy collapses in the 1990's. It is gradually replaced by the tertiary sector, by renting the lands to breeders of other territories, receiving vacationers, organizing educational, sports and festive leisure activities. For all these activities, the attractiveness of mountain and of woodland plays a role of choice. These valuations give a wide part to the memory filling these places and intend to transmit it through the preservation of traditional constructions, productions and festivities and through the sharing of friendship and sensations (rural meals, hikes, rides). This will influence the choice of space development and the relationships and collaborations with neighbour and nearby localities. It also implies to involve the inhabitants and the natives of Montegrosso. Actually, all of them accept the changing of the rules of the land use and participate to practices and feasts that reproduce rituals celebrating the seasonal transhumance of cattle. These celebrations remind the cyclic occupation of the territory quarters and the works accompanying them and promote the consumption of their elaborate and wild products. Thus, the occupation of the familiar teccio notifies the intention to maintain the users' rights; the participation in the common feast, based on grilled meat and spaghetata, seals the membership in the community, the promotion of ordinary meals of the peasant incites to maintain the lifestyles of the ancestors. By summarizing, the former system of production is not viable any more (no herd exist today in Montegrosso) while practices and products of the past still structure the collective memory. Upon these recollections a festive activity is based, which gathers the local people and attracts neighbours and visitors, by valuing the basic products of a very rich food supply: the sweet chestnuts and the cheese, alone or combined to cereals. This food promotion is part of a cycle of identity reaffirmation, which finishes to insert places, objects and practices in the local cultural heritage by making them enter in the museum or by codifying them. All along this process, everyday food is transformed into symbolic food. Flours, dairy products, legumes, winter vegetables as well as products collected during the seasonal moves participate in the constitution of a food heritage of predilection that the movement of the *cucina bianca* idealizes considering it as the inheritance of shepherds and peasants.

## Costruzioni e paesaggi d'alpeggio delle Alpi liguri: conoscenza per una tutela possibile – Constructions and mountain pasture landscapes in the Ligurian Alps: knowledge for potential preservation

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Keywords: Pasture, Piedmont, cultural landscape, protection

Parole chiave: Alpeggio, Piemonte, paesaggio culturale, tutela

On the Ligurian Alps, south-west of the alpine chain, particular artefacts may be found at an altitude higher than 1400 m a.s.l. These artefacts are strongly connected, due to their collocation and function, to life on the mountain pastures. They are a silent testimony to the alpine, woodland and pastoral civilisation that for years has continued to herd the cattle to new pastures from June to September. The structures that can be observed are *selle* (or *sèle*) which are used to store cheeses and dairy products during the pasture months or *giàss* (or *löve*), temporary sleeping quarters, once used as primary spaces for milk production. Other construction types are the *caselle*, with a circular or quadrangular plan and usually covered by pseudo-vaults in concentric rows made of stones. Finally, *balme* were shelters constructed under huge irregular rocks. Structures like stables or barns can be observed at a lower altitude (1400-1600 m). They usually have two stone floors bound by lime mortar with architraves, attics and wooden coverings. As the altitude increases (1600-1900 m) the use of wood and lime decreases, because these materials are more difficult to find and to produce in such areas, while the use of dry stone (or stone bound with clay mortar) is more widespread.

Thanks to the use of materials collected in the surrounding area, mountain pasture structures are successfully integrated with the natural landscape, becoming an essential part of it. Besides brick structures, which can be easily recognised, one may also observe a number of smaller details: lines of dry stone walls to separate pasture areas, tracks, small canals dug in the ground to channel water from streams, depressions in the ground to collect rain water and specific vegetation due to exploitation during pasture season. The landscape of mountain pasture is therefore anthropomorphised and it is difficult to preserve because its artefacts are fragile and precarious in that they are altered or eradicated rapidly, as a consequence of the abandonment of these areas by the cattle herders. Some features are by nature so ephemeral that they change in a few seasons, while others maintain their characteristics for longer even if they need constant maintenance that in pasture areas is guaranteed only when the area is still in use. Maintenance work on these constructions taken out in the last century were careless and did not consider local and traditional materials: cement mortar was inserted within the spaces between stones or at the extrados of stone vaults, a bitumen sheath was laid on the coverings or on the vaults of the *sèle*, a metal plate was used to substitute the hay that was once used for “enclosed roofs” (thatched roofs enclosed by the two pediments of the house) and in rare cases attics were built with clay-cement or reinforced concrete to substitute wood, that probably crumbled.

Structures and areas of pasture are cultural landscapes, with a strong connotation reflecting the long interaction between man and nature. The decline of traditional practices caused by the depopulation of mountainous areas (started in the post-war period of World War II) and

by the abandonment of marginal areas, triggered a process of transformation of the semi-natural environment of mountain pastures involving structures and infrastructures which are not in use anymore.

In order to preserve it, the cultural landscape of mountain pasture requires more and more interventions for an active safeguard and management of the territory. Mountain pastures are safeguarded in various ways but in the areas where pastoral economy is not active and no longer linked to cattle herding, their preservation is only passive, whereas in areas with a strong tradition of livestock and/or where tourism is a source of income, they are actively safeguarded. Moreover, even if there are different forms of safeguard for constructions and mountain pastures, we are still far from preserving the culture of mountain pasture life, with its tradition and knowledge.

## El aprovechamiento de los espacios comunales en el noroeste de la Península Ibérica entre el período romano y el medieval – The exploitation of the common-lands in the NW of the Iberian Peninsula between the Roman and the Medieval period

Margarita Fernández Mier, Juan Antonio Quirós Castillo

Keywords: Communal spaces, rural communities, livestock exploitation, Antiquity, middle ages

Parole chiave: Spazi d'uso comune, comunità rurali, allevamento, Età Antica, Medioevo

Palabras clave: Espacios comunales, comunidades rurales, aprovechamiento ganadero, Antigüedad, Edad Media

The historiography on Spanish rural medieval history has emphasized the significance of communal spaces in the economy of rural communities. Communal areas provided sustenance of livestock and served to collect goods and raw materials. However, because they were spaces of collective exploitation, it was difficult to document or quantify their use throughout history. Written documentation concerning the communal spaces appears after the thirteenth century or later, but for earlier periods documentary references are scarce.

Knowledge of traditional agricultural systems that have remained in use until the mid-twentieth century has led to the conclusion that they are based on integral and optimal exploitation of the various resources provided by different ecological niches. That is, they shaped multifunctional landscapes that were slowly constructed and transformed over the centuries. Therefore, it is not possible to carry out isolated studies about agriculture without taking into account ranching or logging. Nonetheless, the latter practices have been traditionally more difficult to record and analyze.

This paper presents two case studies of communal spaces in mountain areas in the northwest of the Iberian Peninsula. Their chronology ranges between the Roman period and the thirteenth century. The first is located in the Cantabrian Mountains, a mountain area characterized by wide spaces devoted to farming. The other case is the Basque Country, another mountainous although more smooth territory. A number of projects have been carried out to address this research based on different information sources that are allowing us to shed light on occupation and exploitation patterns at different levels. In the framework

of these projects, we have outlined two work lines to address the analysis of agricultural economic activity in the northwest of Iberia. First, the comprehensive study of uninhabited villages based on the joint research in built-up areas of habitat and in agricultural lands. Second, the investigation of currently inhabited villages, where we have analyzed built-up spaces as well as areas of livestock breeding and agricultural exploitation.

We call this activity “agricultural archaeology”. It is based on archaeological records of different nature: palaeobotany, zooarchaeology, geoarchaeology, as well as archaeological survey and excavation of structures located in communal areas. The information obtained from these investigations allows us to delineate some initial conclusions. Both cases illustrate the scarce presence of farming uses during the Roman period. It is not easy to determine whether this difficulty to find farming uses derives from the state of research or to the ways of managing these resources and the kind of farming practices at the time. On the other hand, it is clear that during the Middle Ages a systematic appropriation of mountain areas took place by peasant communities which, since then on, start to be articulated as villages. From the ninth century onwards, the written sources refer to *sernas*, *erías*, *ferragines*, and *agros*. These terms underpin the agricultural structures that have remained in use until the mid-twentieth century, showing the resilience of communal forms of management. In many cases, these forms of exploitation have served as elements underpinning the identities of peasant communities. Finally, our case studies do not reveal the presence of seigniorial agency until at least the tenth century. Therefore, there is a striking contrast between the scarce evidence of seigniorial agency in archaeological record, and its relevance in written records.

## Il compascuo dell’Altopiano di Navelli: un contributo per lo studio delle strutture insediative, economiche e religiose dell’Abruzzo interno tra Antichità e Medioevo – The commonality in the Plateau of Navelli: a contribution to the study of the settled, economic and religious structures of the inner Abruzzo between Antiquity and Middle Ages

Serafino Lorenzo Ferreri

Keywords: Common pasture, boundaries, fortification, archpriesthood, sanctuary, *pagus*  
Parole chiave: Compascuo, confini, incastellamento, arcipretura, santuario, *pagus*

The Plateau of Navelli (AQ) is one of the units in which the mountainous area of Abruzzo is articulated. During the 60s of last century, it has been affected by a land reclamation that altered the formation of a seasonal lake in the middle of the plain. This natural phenomenon is linked to the karst nature of the subsurface and also to the presence of a sinkhole – located at the base of a small and low circular hill – which regulated the dynamics of formation of the lake. Currently only a swamp appears in periods of heavy rain. Despite this, it is possible to reconstruct the extent of the lake and, more importantly, it is possible to investigate the relationship between the local population and the natural phenomenon, and how this has affected settlement, economic and religious patterns during the Ancient Age and the Middle Ages. In fact, the lake was located in an area of pasture and therefore it represented an

important resource of water for the local breeding economy. The archival documentation introduces us to the ways in which this pastureland area was exploited, that is, according to a system of promiscuity which benefited both people of Navelli and Collepietro, the two settlements dominating the plateau, developed as a result of the Medieval fortification in the late 11<sup>th</sup> century. At the same time, archival sources allow to reconstruct the gradual suppression of the common pasture between the second half of the 14<sup>th</sup> and the beginning of the 16<sup>th</sup> century, until the placing of a definitive boundary in early 1800, through whom the territories of the two municipalities are still divided. The witnesses deposited in the proceedings of the various lawsuits that led to the dissolution of the common pasture, argue that this originated from the union of nine villages and the commoning of their goods, aimed at the creation of the two castles of Navelli and Collepietro. Although toponymical and archaeological sources essentially confirm this tradition, several evidences lead to the hypothesis that this pastureland had ancient origins. In the territory of one of the Early Medieval villages, Montone, there was the archpriest church of St. Salvator, situated on a small and low hill facing the seasonal lake and dominating the plateau: here it was found, in the early 20<sup>th</sup> century, a thesaurus of the Republican period connected to a cult of Jupiter. Other archaeological, topographical and toponymical evidences allow to hypothesize the function of this cult as belonging to a pagus sanctuary, probably connected with the presence of the lake and the area of pasture. It probably was involved in the management of this resource, which had to be exploited by the two Roman centers (*vici*) of \*Incerulae and \*Benaterum. Evidences of a connection to the relevance to a pagus of this pastureland, together with toponymical considerations, have finally led to the formulation of a hypothesis about the identification of the pagus N[---], epigraphically documented in the ager of the near Roman *municipium* of *Peltuinum*.

## Paesaggi storici agro-silvo-pastorali nell'Abruzzo interno: dall'analisi multidisciplinare al recupero delle identità culturali locali – Historical agricultural, forest and pastoral landscapes in the inner Abruzzo: from a multidisciplinary analysis to the recovery of local cultural identities

Annalisa Colecchia

Keywords: agro-pastoral landscapes, transhumance, pastoralism, ethnoarchaeology, dry stone structures, Abruzzo

Parole chiave: paesaggi agro-pastorali, transumanza, pastoralismo, etnoarcheologia, strutture in pietra a secco, Abruzzo

The paper presents the first results of a study initiated in the Majella massif which aims to identify fossil agricultural and pastoral landscapes, to define the professional categories involved and to clarify the relationship between grazing and the other forms of the local mountain economy. The vastness and variety of the themes and the territory investigated gave rise to a selection and subdivision of the data so as to illustrate the economic and socio-cultural models. The structure of the identified agricultural, forest and pastoral landscapes brings to light similarities and differences in production as well as in the use of mountain

resources. They also highlight the links, subject to change over time, between anthropic and natural factors, and between variations in climate and historical events.

Pastoral farming, for which evidence can be found in the mountains of Abruzzo from prehistory to the modern age, is a complex production strategy which is expressed in two different ways: long range transhumance, from Abruzzo to Puglia and vice versa, and vertical shifts (“monticazione”: summer migrations to mountain pastures). These in turn are characterized by different strategies depending on the location of the sheep pens (“stazzi”) and on the relationships with the inhabited areas of middle hills and valleys: the phenomenon of “monticazione” characterises, for example, the northern slope of the Majella (Roccamorice, Caramanico, Sant’Eufemia a Majella etc.).

These activities left traces that may be identified using remote sensing and applying a regressive analysis and an ethnoarchaeological approach. The recognizable signs on the ground refer mainly to the last two centuries: older ones are difficult to identify due to the poor visibility of the surface archaeological records, to the seasonal nature and low impact of employment, and to the intense post-depositional processes. Written sources nonetheless contribute towards outlining the pastoral landscape in its qualifying aspects and in its historical depth. Ethno-archaeological sources (reports of the last shepherds or their direct descendants) and material indicators (the articulation of sheep tracks and minor paths, caves and rock shelters, agricultural and pastoral complexes, the writings of shepherds) are equally important. The agricultural and pastoral complexes can be easily identifiable from the orthophotos, which synoptically capture the relationships with the valley villages, roads and waterways. In order to be recognised through remote sensing analysis, the pastoral caves and shelters require the three-dimensional visualization and the dynamic options offered by specific software packages. The cattle tracks (“tratturi”) crossing the rocky ridges can be identified by means of the different orientation of the plants and the different shades of colour that indicate the levels of growth of vegetation. On the highland pastures, that are recognizable by their extension and position, traces of fences and buildings in perishable material can sometimes be seen near the stone structures. The use of targeted surveying, with a feedback effect on the remote analysis, and the progressive arrangement of data in a GIS complete the investigation. The oral heritage and the typical agronomic variety of the mountain contexts of Abruzzo further enrich the historical reconstruction and allow a correlation between cultivation strategies and plant species.

Pastoralism was always paired with seasonal agricultural practices implemented in small areas, selected for their soil fertility and sheltered position, or in open fields, traces of which still exist in some mountain ranges. Both activities were a threat to the extension of woodlands, the felling of which provided pastures for the herds in the heyday of pastoral activity. The “difese” (Spanish “dehesas”), a typical institution of the central Apennines (in the Majella mountains Pescocostanzo, Palena, Cansano etc.), were state or feudal wooded pastures for collective use, closed, south-facing, of various sizes and generally located near the settlements. These allowed seasonal agriculture and the breeding of farm-work animals to be reconciled. During the summer season the herd had access to the “difese”, while in the valley pastures mowing (“sfalcio”) was being carried out to produce hay; goats and sheep were, instead, destined for the high pastures. In the early nineteenth century, with the subversive laws of feudalism that accompanied the crisis of pastoral transhumance, the defences lost their function and their identifying characteristics: homogeneous lots of land were obtained from the pastures to be allocated to farmers for private use.

This piece of research, in addition to addressing methodological issues, aims to define the

concept of marginality generally attributed to the mountain, in that it is located far from the main roads, unrelated to agricultural practices, characterized by the seasonality of its economic activities and settlement strategies, and by the precariousness of its housing modes. Environmental conditioning has determined, however, forms of adaptation which have given rise to economic integrations that have proved to be positive for the development of the territory. Despite occasional episodes of conflict between the different social actors, herding, subsistence farming, harvesting and exploitation of the forest have often coexisted and, in some cases, given rise to or supported entrepreneurial activities (the wool industry and weaving, quarrying and stone working, the production of medicinal substances and sought-after vegetables, mining, silkworm breeding and the production of raw silk for the market). This overview has allowed flexible management of the mountain area to emerge, not geared to marginal activities but to multiple ones.

The gradual depopulation of the mountain, that began in the last two centuries, has indeed given rise to processes of economic and settlement crises. However, the initiatives aimed to reappropriate mountain areas in a sustainable development and retro-innovation key are curbing this phenomenon and promoting the recovery of their material and intangible heritage as well as of their local identities.

## Storia e archeologia di un ambiente montano: un progetto di ricerca sui paesaggi lunigianesi – History and archaeology of a mountain area: a research project on Lunigiana landscapes

Monica Baldassarri, Massimiliano Grava, Enrica Salvatori

Keywords: Global archaeology, historic landscapes, Cultural Heritage, WebGis, public archaeology

Parole chiave: Archeologia globale, paesaggi storici, Beni Culturali, WebGis, archeologia pubblica

Since a few years a research group has been established at the University of Pisa which studies the population and the landscapes of the *Lunigiana* (a region between Tuscany and Liguria) through a project divided into several phases.

Part of the working program is aimed at the reconstruction of historic landscapes through the territorial survey, according to the methodology of “global archaeology”, in order to get an in-depth combination of the scientific findings with the needs of the cultural heritage for the whole diachrony. On the one hand, the aim is to test different methods of surveying in mountain environments, characterised by low visibility and a high degree of erosion; on the other hand, to retrieve data from previous experiences of extensive archaeology.

To this end, we checked the meaningfulness of crossing topographic data, toponyms and socio-economic features with the informations emerged from the examination of the written documents of medieval and modern times. We also recovered the oral sources, important witnesses in an area that in a few decades has undergone profound changes. The analysis of the archaeobotanic evidences, which is needed in order to complete the knowledge of the environmental context, so far has been just hinted, but it is perceived as an integral part of the project and thus there are plans of further investigations.

Given the current administrative fragmentation of the territory defined as “*Lunigiana*

*storica*” and the need to establish collaborations with local institutions, it was not possible to build immediately a research project that could tackle the entire lunigianese area. These conditions prompted the researchers to articulate the project into sections, which are briefly presented in this essay.

The first section is dedicated to the Vara Valley within the project *TraMonti* (2010-2011). It was a complex project, with a substantial part devoted to a census of the cultural heritage (in a broader sense) of the medium and lower valley. This study was carried out through a series of archaeological surveys in several municipalities and through the registration of the cartographic documentation and of the historical and historiographical production.

The first results of these investigations appeared in a series of scientific texts as well as in a webGIS of the Vara Valley cultural heritage, built using OS software with the custom user interface. The entire research was organized in a perspective of public history/public archaeology. The entire project has thus been implemented following a Web 2.0 philosophy: all data collected are in a freely accessible WebGIS, enriched with proposals of historical-cultural routes.

A second part is devoted to a region of the internal Lunigiana (upper Aulella Valley, municipality of Casola), as part of an educational project at the university level in 2013-2014. The research started with both a historical and a specifically archaeological root, which are supposed to be harmoniously merged in order to produce a unified proposal for the characterization of the past rural landscapes in a mountain area.

The starting point of the documentary research on the one hand focused on the already published medieval documents, and on the other on the 1551 cadastre of Castiglioncello, so far unpublished: this source has allowed for a chronological segment the partial reconstruction of the settlements, the ownership structure, the types of crops, their distribution in the territory, and other land characteristics through a dense microtoponymy survey.

In addition to cadastral data and historical maps, also the results of the survey conducted in the second half of the 1970s by the ISCUM on the upper Aulella Valley were taken into account as a basis of the archaeological work: a valuable repertoire data, photos and maps with classification of the main building types. This study on the sources and on the bibliography was followed by a field survey: in the first phase it focused on the different locations described by the land registry of 1551 in the Castiglioncello area.

Some general considerations follow the outline of the main features and of the problems encountered in the implementation of the two sub-projects. These considerations regard the archaeological research in a mountain area like Lunigiana and the choices made in the use of a web searchable geo-database for the management of the collected data.

In the first case the modern methodological approaches to the archaeological study of mountain areas are recalled, as well as to the study of landscapes through archaeology, which include a full study of ecofacts, of labile features related to the temporary use of territories and of the relationships between palaeo-environments and rural societies.

On the other hand, some of the difficulties encountered so far in the research on Lunigiana are emphasized. These difficulties range from the decay of many inner areas to an uncritical use of the territory towards the narrow plains and the coasts. In both cases, the consequences are the decrease in the visibility and the gradual and dramatic erosion of artificial, vegetal and oral sources.

As far as the choice of the geo-database for data storage is concerned, the potential of this system for the reconstruction of historical and archaeological features is stressed. Also the choice of a FLOSS webGIS is explained with both ethical and practical reasons. If for a

project like *TraMonti* the choice allowed for an easier sharing of the research contents with the audience, for Casola it required the testing of the system in the management of toponyms, microtoponyms and “so-called places” as well as those properties derived from not geometric cadastres.

Finally, another aspect that had an important role in the history of these mountains is recalled. In the last centuries and again in recent years the area witnessed some catastrophic events: a flood in Val di Vara and an earthquake between Lunigiana and Garfagnana. The project aims to recover also the data of these two phenomena, relevant to the history of the cultural heritage of the area and for the collective memory: catalysts for the change of scenery and for the modification, if not destruction, of the historical settlement.

In the concluding remarks of the essay we recall the need for a multidisciplinary approach in the study of mountain areas. Moreover, it is highlighted the difficulty of working on areas that still suffer from marginalization and sparse population, with the obvious consequences of economic and cultural nature in the implementation of systematic projects of a certain amplitude.

However, in the face of many studies that often insist on historically/archaeologically well-known regions, which are unlikely to change the picture of what we know of the past, the members of this team believe that such a study of a marginal area may instead offer many new information to the researcher, reverse interpretive frameworks and ensure that scientific research could affect the life of contemporary society.

## I Romani in montagna: tra immaginario e razionalità – The Romans in mountain: between imaginary and rationality

Michel Tarpin

Keywords: The Roman and the Gauls, the Romans and the Alps, Transpadana conquest, concept of Italy

Parole chiave: I Romani e i Galli, i Romani e le Alpi, conquista della Transpadana, concetto di Italia

In the imaginary of the ancients, the Alps are almost the most hostile thing one can imagine, comparable, for certain authors, to the underworld. They were afraid of the cold and altitude, and thought that the inhabitants were particularly wild. Even those who had crossed the mountain repeated that it was hostile. The propaganda speeches of Augustus, at the time of the alpine conquest, repeated that populations were aggressive and cruel. Strabo also sums up the conquest to the extermination of looters and the opening of roads. However, the mountain can be a landscape element, when it is far, as can be seen on the frescoes of Pompeii and more explicitly in the letters of Pliny the Younger. The Alps are thus impassable. Yet when the Romans arrived there, they were for a long time open to trade and even to migration.

The literary discourse is clearly refuted by the eventual conduct of the Romans. In 225 BC, after the victory of Talamone, in Tuscany, they pursued the Gauls beyond the Po (nearly 500 km north). As soon as 222, they took Milan, crossroads of the alpine routes to Po and Italy. Once removed the Carthaginian danger (218-201 BC), Rome resumed the conquest of Transpadana. In 196, Come was taken. In very little time, the Romans had managed to seize

the main outlet of the Alpine trade routes. This means that they had a very good knowledge of the alpine roads and of the geography of the Po valley. They were also interested in mining. As soon as 143, they attacked the gold mines of the Bessa, north of Turin. Finally, in 100, they created in Ivrea the last Roman colony of Italy, near the Aosta Valley (and the two passes of St. Bernard) and close to gold mines.

There is no real inconsistency between literary discourse and political reality. The Romans needed to believe that the Alps were insurmountable. So they told terrible things about them, because they thought they formed the natural – almost divine – boundary of Italy. This discourse is still found in Cicero or in Sallust. In January of 49, while Caesar was near Rimini, his enemies in Rome, claimed he was camped on the crests of the Alps! The idea that the Alps form Italy's border can be traced at least to the third century BC, and more precisely to Cato the Elder. Polybius writes that as early as 225, the Romans planned to drive the Gauls out of the Po valley. It certainly was not just to get rid of a dangerous neighbor.

In the second century BC, we see them organizing the region, building roads (via Postumia in 148) and setting the limits of cities. In 173, a proconsul intervened in an "internal conflict" in Padua, and the same year land were distributed to Roman and Latin citizens and a group of Ligurians was deported on the left bank of the Po. Rome was at home in Transpadana. Surprisingly, ancient authors almost always use the word "Italy" to refer to the Po valley, the Transpadana and Venetia, including in speeches attributed to men of the second century BC. Yet at that time, the official Italy stood at the Esino, in the present province of Ancona. The creation of an official province of Cisalpine Gaul is not prior to the beginning of the first century BC. But at this time, there are no longer many Gauls in Cisalpine... The Romans had thus very early the idea that Italy extended to the Alps. Before Augustus, Italy was primarily a religious concept, not so much an administrative structure. Geographical knowledge encouraged the Romans to think that the whole peninsula could be Italian. The conquest of the Cisalpine was therefore quite different from that of Spain or Africa: it served to extend Italy. We notice that Sulla wanted to expand the pomerium – the sacred precinct of Rome –, probably because he had enlarged Italy by reporting the northern boundary to the Rubicon, near Rimini.

Believing that the mountain was impassable comforted the idea that the gods had made Italy surrounded by seas and by a natural fortification, and, obviously, that Rome had to conquer all that land, because Italy was destined to be Rome's garden. Even after the conquest of Transalpine Gaul, when there was no longer any enemy on the opposite side, they continued to tell that the Alps were a terrible place. They were thus ideologically coherent. Caesar, a prudent man, had taken control of the pathways by creating cities on the edge of the plain or in the first reliefs. He had not sought to occupy the mountain, but only to control the outlets. In fact, from that time, Italy was covering the entire peninsula. It is not known if there was a clear boundary: maybe it was the mountain itself. Caesar, as Sulla, enlarged the pomerium. Officially Cisalpine did not become Italian until 42 BC, by decision of the triumvirate. But it was not from generosity towards former "Gauls". Antony, Octavian and Lepidus were just too afraid that one of them could control a rich region, where Caesar had been able to recruit so many legions. It was a measure of political prudence. In fact, Caesar had carried out the old Cato's project and made the peninsula a Roman Italy.

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