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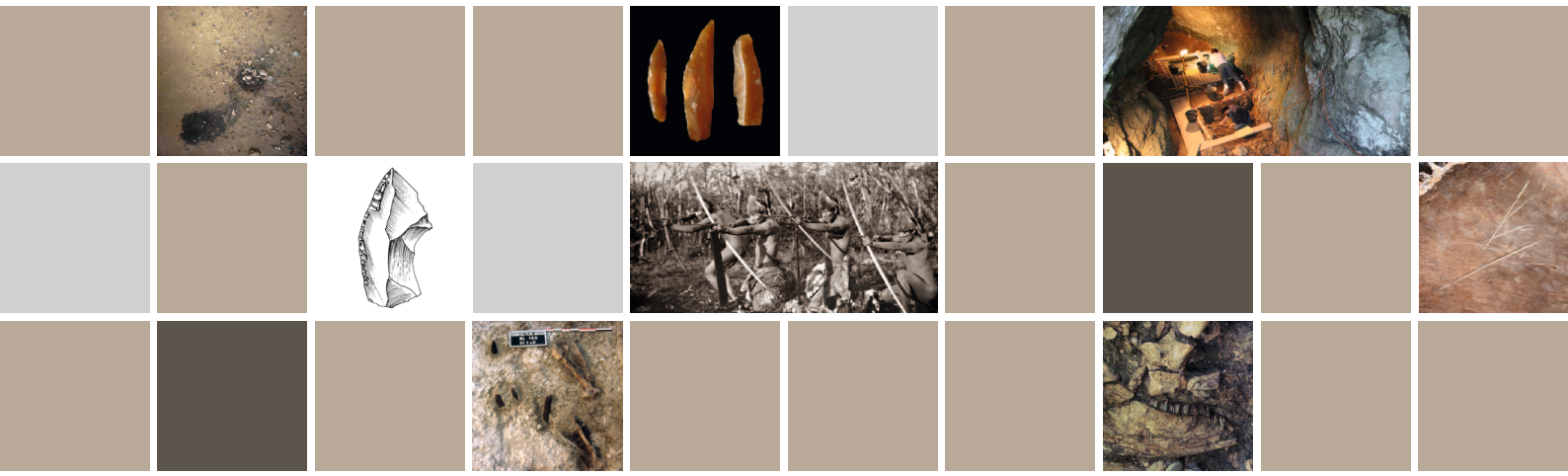

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The contributions should be addressed to:

REVUE P@LETHNOLOGIE
Vanessa LEA, Research associates

TRACES - UMR 5608 of the CNRS
Maison de la recherche
5 allées Antonio Machado
31058 Toulouse cedex 9, FRANCE

Phone: +33 (0)5 61 50 36 98
Fax: +33 (0)5 61 50 49 59
Email: vanessa.lea@univ-tlse2.fr

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Article outline

FROM SEASON TO SEASON:

a Revision of the Functional Status of Sauveterrian Sites in the North Eastern Sector of the Italian Peninsula and Implications for the Mobility of Human Groups

Federica FONTANA

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FROM SEASON TO SEASON:

a Revision of the Functional Status of Sauveterrian Sites in the North Eastern Sector of the Italian Peninsula and Implications for the Mobility of Human Groups

Federica FONTANA

Abstract

In this paper, I reconsider the "classic" occupation model for the north eastern sector of the Italian peninsula during the Sauveterrian based on a re-evaluation of the functional status of the known sites. The analysis is based on research conducted with the goal of defining the notion of a hunting camp in order to revise the archaeological data available in this territory. As a result, two categories of organised occupations could be defined: 1) the numerous sites of the alpine sector located in varying topographical and altimetric situations (in valley bottoms, and in the mid and high mountain zones) and often characterised by restricted occupation areas, the frequency of the habitation structures and economic activities with a strong hunting bias, and 2) the rare sites on the plains, which cover larger occupation areas and for which we have almost no economic data. This context suggests, at the least, a nomadic system within the alpine territory involving small groups based in different valleys and who moved to higher ground during the summer in connection with hunting activities. It is also possible that these groups belonged to communities with varying compositions that moved within a larger territory extending towards the Adriatic, with the installation of aggregation camps on the plain in the winter.

Keywords

Sauveterrian, north-eastern Italy, territory, settlement patterns, ethnography.

1 - Introduction

The Sauveterrian settlement of north east Italy has received considerable coverage in the Italian literature. The extensive data collected from the 1970s onwards, particularly in the alpine and prealpine sectors, has led to the development of a seasonal territorial occupation model ("vertical nomadism") based on the presence both of sites located in wide valley bottoms, most often beneath rocky shelters, and high mountain sites at around 2000 m (Broglio 1980, 1992; Broglio and Improta, 1995). The high mountain sites have been interpreted as seasonal habitations (characterised by flat topography, in lakeside and/or rock shelter positions) or as hunting camps when located in strategic positions (rocky ridges, passes and trails). This model is largely based on certain features of the lithic industries, such as the proportions of tools *versus* armatures and armatures *versus* microburins, which are considered as indicators for the determination of site functions. Lithic raw materials have also been taken into account, enabling the identification

of a major network extending from the prealpine margin to the continental divide, and linking all of these sites with a single occupation system (Broglio and Lanzinger, 1990; Lanzinger, 1985).

Without wishing to question the rigour of this reconstruction, the possibility of a more complex system has been considered for several years, due to the acquisition of new data providing a more detailed context for occupations, and also to the multiplication of studies (Cusinato *et al.*, 2003, Fontana *et al.*, 2011). The application of these detailed studies is still far from being systematic and the work to be done in the field and the laboratory remains considerable. This colloquium has nonetheless encouraged us to pursue this hypothesis, enabling us to set as the starting point for our reasoning the re-evaluation of the functional status of these sites.

2 - The concept of "hunting camps": ethnographic data

In order to define the concept of a "hunting camp", I briefly reviewed the ethnographic literature. This literature shows the existence of a great variety of "sites" linked to the hunting activities of modern hunter-gatherers. This variability is also heavily conditioned by the mobility strategies of the groups involved. According to the literature, "hunting camps" can fall into different site categories (Binford, 1980; Bartram *et al.*, 1991):

- "locations", i.e. short-term sites for the provisioning or transformation of raw materials, which often produce a low number of tools as in the case of "killing/butchering sites";
- "field camps"; temporary operational centres, generally occupied by specialised groups ("specialised work parties" or "task groups"). "Hunting camps", implying a camp of at least one night, fall into this category, most often occupied by specialised hunter groups ("hunting parties");
- "stations"; a term specifically indicating the places used by "task groups" in order to keep watch on the territory and to collect information on the movements of animals or other human groups. "Stations", which are rarely occupied during the night, include "hunting stands" (Binford, 1978a).

Binford (1980) specifies that, while the first category of sites is common to both forager groups and collector groups, the two latter are more often typical of collectors. However, the same author underlines the flexibility of these occupation systems: "It should be clear by now that we are not talking about two polar types of subsistence-settlement systems; instead we are discussing a graded series from simple to complex", (Binford, 1980, p. 11). He also indicates the possibility of variability in the mobility of groups according to seasonal cycles: "The point here is that logistical and residential variability are not to be viewed as opposing principles – although trends may be recognised – but as organisational alternatives which may be employed in varying mixes in different settings", (Binford, 1980, p. 19). We can also add the category of "residential hunting camps", i.e. sites associated with "serial foragers" or "serial specialists" travelling in groups following the resources available in certain areas, and adhering to a predictable seasonal cycle (Binford, 1980, p. 16).

This proliferation of terms, apparently corresponding to a variety of specific functions, probably explains the diverse conceptions of the "hunting camp" expressed by the participants in this colloquium. It is thus also likely that the term "hunting camp" may cover several situations. That said, let us return to the original question: how can we recognise and differentiate between the various typologies of a "hunting camp" and how can we distinguish them from residential sites?

According to the ethnographic literature, each category of site should have an archaeological equivalent in terms of the specific traces left by the activities and by their spatial organisation (Binford, 1978b, 1980). In relationship to different mobility strategies, residential sites are very

variable, depending on the occupation duration and its recurrence. In the case of Inuit hunters with logistical mobility, Binford (1978b) emphasises the very high dispersion of remains that rarely appear superimposed over each other, with a very complex spatial organisation. On the contrary, the specialised sites of these same groups are distinguished by indicators of frequent reoccupation and the use of the same areas for the same functions. The author adds details regarding the site types, stating that caves and rock shelters were most often used as hunting or fishing camps by specialised groups or as "transient camps", while the habitation camps were most often located in the open-air. On the same subject, Binford also reports that in regions located to the north of the 35th parallel no current groups are known that use caves or rock shelters as residential sites. However, these observations appear to be specific and linked to highly specialised groups, and therefore only partially relevant to our study.

How then can we attribute a function to our archaeological sites? I believe it is essential to work on several aspects; namely to situate the sites in their territory, to define the activities and their spatial organisation by means of multidisciplinary studies, to attempt to identify the social composition of the occupants, and finally to relate each of these elements to each other.

3 - Geographical and paleoenvironmental context of north east Italy in the early Holocene

The geographical area analysed roughly corresponds to the three current administrative regions of north east Italy: Trentino-Alto Adige, Veneto and Friuli Venezia Giulia. It extends from the main alpine watershed to the coast of the Adriatic Sea, taking into account the fact that the coastline in the early Holocene would have been a few kilometres further out compared to the current one. The courses of the Adige and the Po constitute the south western limit of the area considered here. The course of the Po may effectively have represented a territorial limit as is indicated by the collection of exclusively local raw materials by groups settled respectively on the southern and northern sectors of its hydrographic basin (Fontana *et al.*, 2009a; Fontana and Guerreschi, 2009). The course of the Isonzo constitutes the limit in the east. It has been suggested that the mobility of the groups living in the Trieste karst took place within a restricted territory, as demonstrated by the analysis of lithic raw materials (Boschian, 2003).

The territory considered therefore includes, from the coast inland:

- an extensive area of wetland plain formed in the early Holocene by lagoons and marshy areas, and, towards the barrier represented by the first prealpine massifs, by an alignment of resurgences. This flat topography is interrupted only towards the south west by isolated reliefs of volcanic origin; the Colli Euganei (maximum altitude 603 m) and the Monti Berici (maximum altitude 444 m), which are located in the centre of the plain of the Veneto.
- a series of prealpine massifs, most often represented by high limestone plateaus; from west to east, the Monti Lessini, the Altopiano di Asiago and dei Sette Comuni, the Monte Grappa massif, the Altopiano del Cansiglio and the Friuli prealps;
- alpine reliefs with topography varying according to the different substrata, and having altitudes up to 3000 m;
- valleys of variable widths crossing the prealpine and alpine relief (from west to east: Adige, Brenta, Piave, Tagliamento, Isonzo), first oriented north-south, and then west-east on the plain.

In terms of the paleoenvironment of the Preboreal plains, the results of palynological analyses demonstrate the presence of a wooded environment dominated by *Pinus sylvestris-montana*, replaced in the Boreal by mixed oak woodland and hazel (Cattani, 1977, 1992). Regarding the mid-high mountain area, the forest expanded in the Preboreal period with larch (*Larix*) and pine (*Pinus*), and from the end of this period *Picea* increased and the tree line was found at an altitude higher than that of today (Oegll, Wahlmüller, 1992; Kofler, 1992; Speranza *et al.*, 1996; Ravazzi *et al.*, 2007). The faunal remains recovered from anthropogenic contexts, above all in sites protected by rocky shelters, demonstrate a reduction in the proportion of ibex from the Preboreal to the Atlantic and a greater proportion of red deer, roe deer and wild boar in relation to the expansion of the wooded environment. In the rare mountain contexts where fauna have been preserved, the presence of red deer is accompanied by ibex and chamois, together with other secondary species (roe deer, bear, marmot and hare).

4 - Looking for hunting camps: the archaeological data

Several dozen sites dated to the early Holocene and attributed to the Sauveterrian have been discovered in the north east of the Italian peninsula. These include discoveries of sites made during field walking and excavations for which we have radiocarbon dates. Almost of the latter are found in valley bottom rock shelters, and more rarely in high and mid-mountain locations. Thick stratigraphic sequences have been uncovered in the valley bottom sites. These sequences serve as references for numerous other deposits found without any stratigraphic context. The distribution of sites is not uniform, with a significant concentration along the Adige valley although sites are more scarcer all around, and exceptions are essentially due to the presence of locally active researchers (Dalmeri and Pedrotti, 1992; Broglio and Improta, 1995; Fontana *et al.*, 2011; Kompatscher, Hrozny Kompatscher, 2007).

A distribution diagram allows us to identify the main Sauveterrian occupations based on a sample of seventy-three stations (figure 1). It compares, for open-air, lakeside, rock shelter, block shelter and cave sites, the altitudes of the sites and their topographic location. The names of the sites are indicated in the corresponding table (table 1) and their location is illustrated in figure 2. Four main concentrations can be observed:

- an initial group located at an altitude of less than 100 m. This includes the somewhat restricted group of the plains of the Veneto and Friuli (Broglio *et al.*, 1987; Candussio *et al.*, 1991, 1994);
- a second group including the stations located at altitudes between 100 and 565 m and which can be found in very varied topographic situations. The most numerous sites are in the valley bottoms (Bagolini *et al.* 1984; Bazzanella *et al.*, 1997, 2004; Broglio and Lanzinger, 1985-1986; Broglio and Kozlowski, 1983; Dalmeri *et al.*, 2008; Guerreschi, 1996; Lunz, 1986; Wierer, 2008; Wierer and Boscato, 2006), to which can be added the rarer sites located on the low altitude relief of the Monti Berici (Grottina dei Covoloni del Broion, Peresani *et al.*, 2000b);
- the third group, including sites at altitudes between 1000 and 1238 m, and mainly located on the prealpine massifs or, more rarely, in the alpine area (Awsiuk *et al.*, 1994; Dalmeri, 2005; Dalmeri *et al.*, 2004; Peresani and Angelini, 2002; Peresani *et al.*, 2000a, Peresani *et al.*, in press);
- finally, the last, very rich group consists of deposits with altitudes between 1550 and 2344 m. These are the numerous sites identified in the alpine sector (Angelucci *et al.*, 1998; Bagolini and Dalmeri, 1987; Broglio *et al.*, 1982, 2006; Dalmeri and Lanzinger, 1992; Fontana and Pasi, 2002; Fontana *et al.*, 2002, 2009b; Kompatscher and Hrozny Kompatscher, 2007; Lanzinger, 1985), to which can be added the stations of Cima XII, located on the highest slope of the Altopiano dei Sette Comuni (Frigo and Martello, 1991; Broglio *et al.*, 2006).

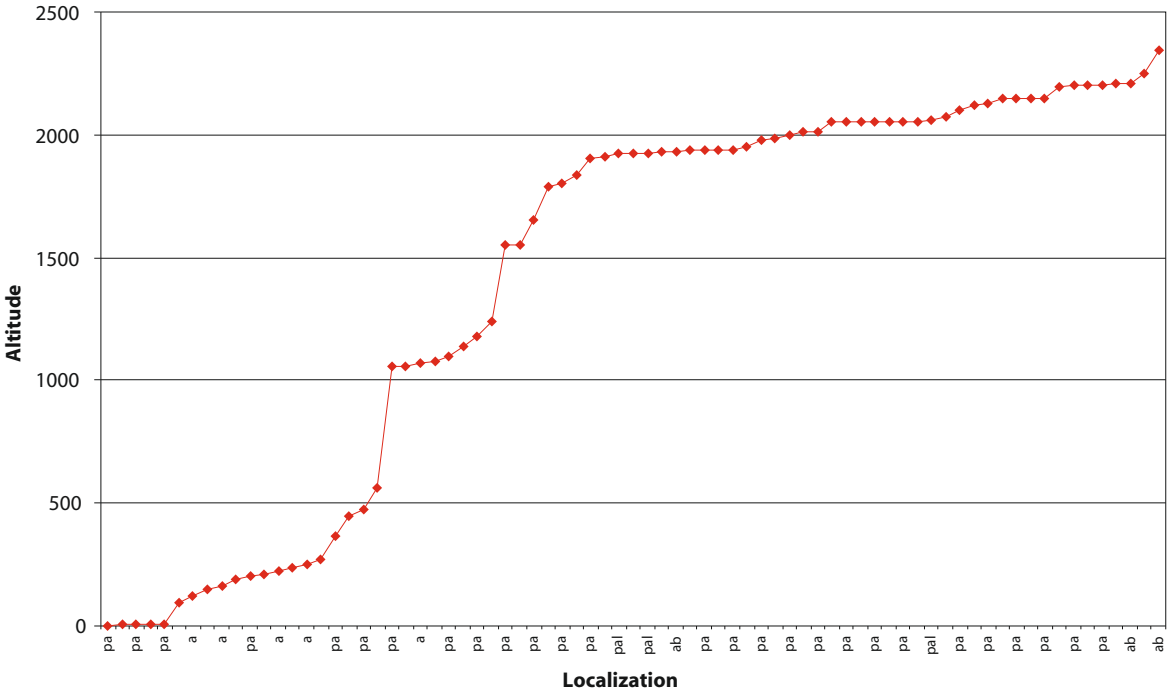

Figure 1 - Distribution of the main Sauveterrian sites in north east Italy by altitude and topographic location (PA: open-air; PAL: open-air on a lakeshore; A: rock shelter; Ab: block shelter).

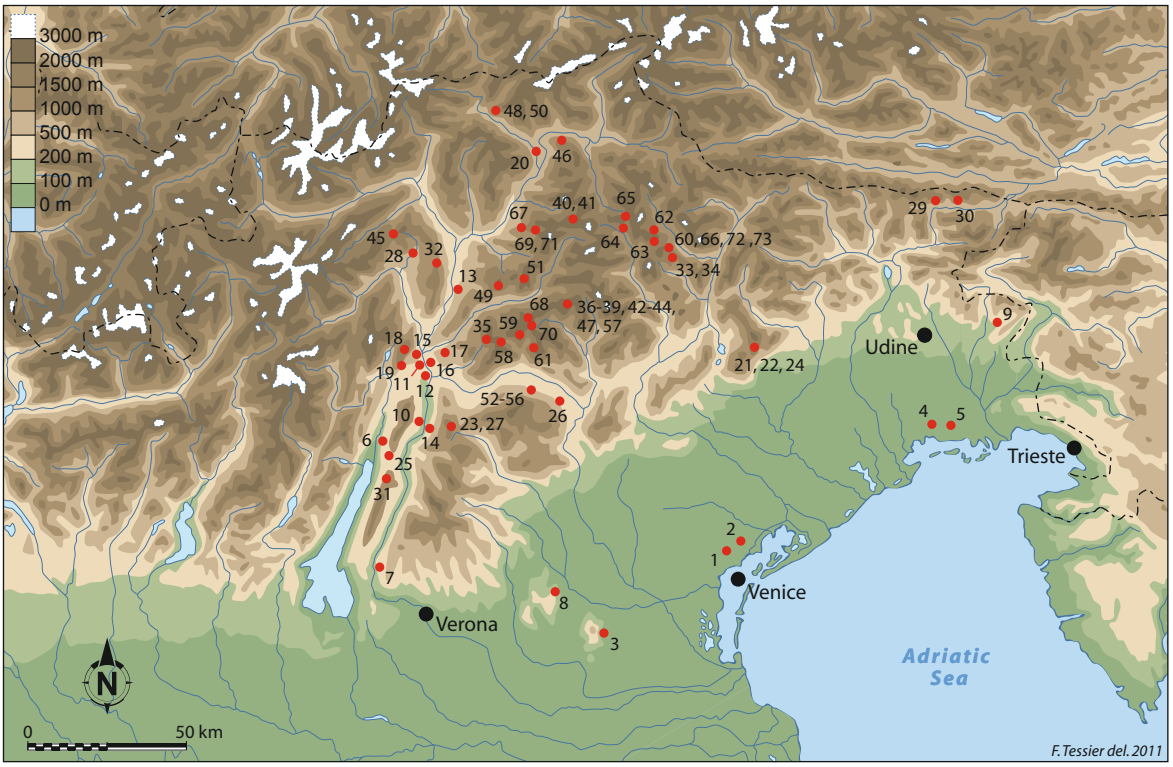

Figure 2 - Map of the north eastern slope of Italy and geographic location of the main Sauveterrian sites. The number corresponds that that indicated in table 1.

Table 1 - The main Sauveterrian sites in north east Italy : location (PA: open-air; PAL: open-air on a lakeshore; A: rock shelter; Ab: block shelter; C: cave), altitude and main bibliographic reference.

No.	Site	Localization	Altitude	Bibliographie
1	Dese	PA	0	Broglio *et al.,* 1987
2	Altino	PA	10	Broglio *et al.,* 1987
3	Casa Romito	PA	10	Peresani *et al.*,2000b
4	Muzzana del Turgnano	PA	10	Bressan, 1984
5	S. Giorgio di Nogaro	PA	10	Bressan, 1984
6	Moletta Patone	A	95	Bagolini *et al.,* 1984
7	Riparo Soman	A	120	Broglio, Lanzinger, 1985-1986
8	Grottina dei Covoloni del Broion	C	150	Peresani *et al.,* 2000b
9	Riparo Biarzo	A	164	Guerreschi, 1996
10	Romagnano Loc	A	190	Broglio, Kozlowski, 1983
11	La Vela	PA	201	Bazzanella *et al.,* 1997
12	Zambana loc. Vatte	A	210	Broglio, 1980
13	Dos de La Forca-Galgenbühel	A	225	Bazzanella *et al.,* 2004
14	Acquaviva	A	240	Angelini *et al.,*1980
15	Pradestel	A	250	Dalmeri *et al.,* 2008
16	Riparo Gaban	A	270	Bagolini, 1980
17	Gini di Seregnago	PA	364	Bagolini, Pasquali, 1985a
18	Terlago Lago Montepiana	PAL	449	Dalmeri, 1985
19	Vezzano Loc. Naran	PA	476	Pasquali, 1985
20	Stufles	PA	565	Lunz, 1986
21	Casera Davià II	PA	1060	Peresani, Angelini, 2002
22	Casera Lissandri I	PA	1060	Peresani *et al.,* 2000a
23	Riparo La Cogola	A	1070	Dalmeri, 2005
24	Casera Lissandri XVII	PA	1075	Peresani *et al.,* sous presse
25	Passo Santa Barbara	PA	1100	Dalmeri, Pedrotti, 1992
26	Grotta d'Ernesto	C	1137	Awsiuk *et al.,*1991
27	Carbonare	PA	1181	Bagolini, Pasquali, 1985b
28	Le Regole 3	PA	1238	Dalmeri *et al.,* 2004
29	Casera Valbertad Alta	PA	1550	Bressan, 1984
30	Col de Pramollo	PA	1550	Bressan, 1984
31	Malga Campo	PA	1650	Bagolini *et al.,*1980
32	Passo della Mendola IV	PA	1790	Dalmeri, Pedrotti, 1992
33	Forcella Alleghe	PA	1805	Fontana *et al.,* 2002
34	Forcella Mont	PA	1836	Fontana *et al.,* 2002
35	Malga delle Buse del Sasso I-III	PA	1906	Bagolini, Pasquali, 1985a
36	Laghetti del Colbricon VII	PAL	1910	Bagolini, Dalmeri, 1987
37	Laghetti del Colbricon I	PAL	1922	Bagolini, Dalmeri, 1987
38	Laghetti del Colbricon II	PAL	1922	Bagolini, Dalmeri, 1987
39	Laghetti del Colbricon III	PAL	1922	Bagolini, Dalmeri, 1987
40	Plan de Frea I, II, III	Ab	1930	Broglio *et al.,*1982
41	Plan de Frea IV	Ab	1930	Angelucci *et al.,* 1998
42	Laghetti del Colbricon IV	PA	1935	Bagolini, Dalmeri, 1987
43	Laghetti del Colbricon V	PA	1935	Bagolini, Dalmeri, 1987
44	Laghetti del Colbricon IX	PA	1940	Bagolini, Dalmeri, 1987
45	Laugen II	PA	1940	Lunz, 1986
46	Ast Alm	PA	1954	Lunz, 1986
47	Laghetti del Colbricon VIII	PA	1975	Bagolini, Dalmeri, 1987
48	Jochtal I	PA	1985	Lunz, 1986
49	Jochgrimm	PA	2000	Lunz, 1986
50	Jochtal II	PA	2010	Lunz, 1986
51	Reiter Joch	PA	2010	Lunz, 1986
52	Cima XII I	PA	2050	Frigo, Martello, 1991
53	Cima XII II	PA	2050	Frigo, Martello, 1991
54	Cima XII III	PA	2050	Frigo, Martello, 1991
55	Cima XII IV	PA	2050	Frigo, Martello, 1991
56	Cima XII IX	PA	2050	Broglio *et al.,* 2006
57	Laghetti del Colbricon VI	PA	2050	Bagolini, Dalmeri, 1987
58	Val Ziolera	PA	2050	Bagolini, Pasquali, 1985a
59	Lago delle Buse I-IX	PAL	2060	Dalmeri, Lanzinger, 1992
60	Malga Prendera	PA	2073	Fontana, Pasi, 2002
61	Col S. Giovanni I-II	PA	2101	Bagolini, Pasquali, 1985
62	Melei 2	PA	2120	Fontana *et al.,* 2002
63	I Siadoi	PA	2130	Fontana *et al.,* 2002
64	Monte Pore-Fedare I-IV	PA	2145	Lunz, 1986
65	Lago di Valparola I	PA	2150	Lunz, 1986
66	Mondeval de Sora VF1	Ab	2150	Alciati *et al.,*1992
67	Seiser Alm XVI Schneid	PA	2150	Lanzinger, 1985
68	Lago delle Buse Basse I	PAL	2193	Bagolini, Pasquali, 1985a
69	Seiser Alm XV Schneid	PA	2199	Lunz, 1986
70	Lago delle Stellune-Forcella Valsorda	PA	2200	Bagolini, Pasquali, 1985a
71	Seiser Alm X Schneid	PA	2200	Lunz, 1986
72	Mondeval de Sora VF2	Ab	2212	Fontana, Pasi, 2002
73	Mondeval de Sora VF20	Ab	2344	Fontana, Pasi, 2002

4.1 - The sites on the plains

Few sites are located on the plains, for reasons probably partly linked to their reduced visibility due to sedimentary coverings. They are all in the open air, and are located in particular in the area of the lagoon of Venice and on the plain of Frioul, at distances from the current coastline of less than 8 km (Dese, Altino, San Giorgio di Nogaro, Muzzana del Turgnano) (Broglio *et al.*, 1987, Bressan, 1984; Candussio *et al.*, 1991, 1994). These deposits, which in some cases appear to extend over very large areas, provide information on the occupation of the resource-rich wetland areas. However, the lack of systematic research and the poor preservation of organic remains prevent us from accurately evaluating the activity types and their organisation. The only data available refers to the presence of edible marine molluscs (Broglio *et al.*, 1987). The analysis of the lithic raw materials mainly indicates collection from the alluvia located around 15 km away, but also from more distant prealpine Mesozoic formations. The presence of major lithic assemblages, in particular the great quantity of cores from the Altino site, seems to indicate both intensive and extensive occupations, the significance of which in the territorial occupation system is probably under-estimated.

4.2 - The valley bottom sites

The richest group contains the rock shelters located along the Adige/Isarco valley (Soman, Romagnano, Vatte di Zambana, Galgenbühel-Dos de la Forca, Pradestel, Gaban) (Bazzanella *et al.*, 2004; Broglio and Lanzinger, 1985-1986; Broglio and Kozlowski, 1983; Dalmeri *et al.*, 2008; Wierer, 2008; Wierer and Boscato, 2006) and, to a lesser extent, in other alpine valleys (Riparo di Biarzo, in the Natisone valley, and Moletta Patone, in the Sarca valley) (Guerreschi, 1996; Bagolini *et al.*, 1984). Open air sites are rare, and include La Vela (Adige valley), which is unfortunately still largely unexplored (Bazzanella *et al.*, 1997) and Stufles (at the confluence of the Isarco and Rienza valleys) (Lunz, 1986). The deposits in rock shelters often present deep stratigraphic sequences that indicate occupations lasting several thousands of years and sometimes beginning in the Tardiglacial period. This is explained by the presence of lake basins and marshy areas rich in varied resources. The lithic raw material used is flint from prealpine Mesozoic formations, which are locally very abundant. The proportions of tools to armatures and armatures to microburins are very variable in the different occupation levels (50-83%). However, it should be noted that these values may be subject to debate due to the small size of the areas excavated. The faunal analysis shows a wide range of species including not only ungulates, but also turtles, birds, fish and freshwater molluscs (Boscato and Sala, 1980). A recent zooarchaeological study has highlighted a predominance of ungulate leg extremities, which may suggest activities related to the treatment of skins (Clark, 2000; Grimaldi 2006b). Recent observations carried out at the rock shelter of Galgenbühel-Dos de la Forca are very instructive. They show an economy specialised in the exploitation of the resources of a wetland environment (in particular fish, beaver and freshwater molluscs) linked with seasonal occupation in spring and summer (Wierer and Boscato, 2006). Finally, we should consider the identification of a portion of a habitation structure at Romagnano (Broglio, 1984), while the only indication as to the composition of the groups who occupied these sites is represented by the discovery of two female graves (Vatte di Zambana and Mezzocorona), of which the second poses a problem in terms of its dating (Dalmeri *et al.*, 1998, 2002).

4.3 - The mid-mountain sites

Due to their recent discovery, the mid-mountain sites are still insufficiently taken into account. The majority of stations are located on karstic prealpine massifs, often in the open-air (Casera Davià II and Casera Lissandri I and XVII on the Cansiglio high plateau) (Peresani and Angelini, 2002; Peresani *et al.*, 2000a, Peresani *et al.* in press), more rarely in caves (Grotta d'Ernesto on the Sette Comuni high plateau) (Awsiuk *et al.*, 1994) or in rock shelters (La Cogola shelter, on the Folgaria high plateau) (Dalmeri, 2005). The only exception is the site of Le Regole, located in the upper Val di Non, within the alpine zone and in a lakeside setting. The majority of these sites date to the Preboreal Period (Le Regole, 9737 ± 42 BP, Dalmeri *et al.*, 2004; Grotta d'Ernesto, 1165 m, 9110 ± 80 BP and 8140 ± 80 BP, Awsiuk *et al.*, 1991; La Cogola, 1070 m, 9820 ± 60 BP and 9430 ± 60 BP, Dalmeri, 2005; Lissandri XVII, 1075 m: 9410 ± 50 BP, Peresani *et al.*, in press) and are of varying nature. The stations of Le Regole and Grotta d'Ernesto cover restricted surface areas (15 and 45 m² respectively) and are characterised by a low number of retouched objects. At Grotta d'Ernesto these are primarily armatures, and at Le Regole, 15 retouched pieces including 6 armatures, probably imported ready-made. Both sites appear to be short-term occupations, linked to hunting activities (hunting stands?). A restricted area (5-7 m²) has been explored at the site of La Cogola, at 1070 m. Legs and extremities of legs predominate among the ungulate remains (30 % remains of *Capra ibex*). Seasonality indicators attest to occupation from early summer to autumn, and among the retouched objects a high proportion of armatures (70 %) can be observed. Finally, Malga Lissandri XVII, located in the open air and at an altitude of 1050 m, appears to be a longer duration station due to the number of lithic remains discovered. Around 350 retouched objects and almost as many microburins have been excavated here. Unfortunately the fauna has not been preserved. Usewear analyses show considerable activity in terms of hunting and exploitation of carcasses (Peresani *et al.*, 2000a, Peresani *et al.* in press).

4.4 - The high mountain sites

The high mountain sites constitute the most common group. The majority of these are open-air sites, sometimes located on lake shores, on rocky ridges or near passes, with a few rock shelters. In some cases, intensive research has enabled the discovery of several deposits in restricted territories, emphasising the intensity of occupation of these mountain areas (Colbricon, Seiser Alm, Passo Sella, Cima XII, Mondeval de Sora, etc.) (Bagolini and Dalmeri, 1987; Broglio *et al.*, 2006; Fontana and Pasi, 2002; Fontana *et al.*, 2002; Kompatscher and Hrozny Kompatscher, 2007; Lanzinger, 1985).

For the open air sites, the information available on the economic and spatial data is most often limited, except in a few cases. At Seiser Alm XV and XVI, the excavated surfaces cover 9 and 4 m² respectively, producing a large proportion of armatures (90 %) (Lanzinger, 1985). The three sites of Lago delle Buse (altitude around 2060 m; surface areas of 9, 12 and 13 m²) have produced hearths and a relatively high number of retouched objects (between 200 and 600) with 65 % to 77 % armatures (Dalmeri and Lanzinger, 1992). Use-wear analyses indicate activities aimed mainly at hunting and the exploitation of animal carcasses (Lemorini, 1992).

Colbricon is a well-known group of sites (altitudes between 1910 and 2050 m; excavated surfaces between 14 and 50 m²), some of which have been interpreted as residential camps around small lakes, and others as localised hunting stations on rocky ridges (Bagolini and Dalmeri, 1987). A series of radiocarbon dates carried out recently has revealed older dates for the deposits located on the ridges and more recent dates for the sites on the lake shores (Grimaldi, 2006).

The most complete data results from the rare block shelter deposits. At Plan de Frea (Val Gardena, 1930 m), four sequences have been identified and excavated around the same block (Broglio *et al.*, 1982; Angelucci *et al.*, 1998). For example, the Sauveterrian station of Frea I (surface excavated 15 m²) has produced habitation structures formed of postholes and blocks indicating the limits of a small hut. The lithic industry comprises 182 retouched objects (68 % armatures). At Frea IV, located in another part of the same block, at least five different occupation phases have been identified, dating from the Preboreal to the late Boreal. The lithic industry is more abundant (454 retouched objects in total with 68 % armatures) and the fauna indicate hunting for red deer and ibex, with a variable level of hare (*Lepus timidus*). The carcasses were introduced whole or in quarters into the site. Still more surprising in terms of the excellent preservation of the remains, site VF1 at Mondeval de Sora, located at an altitude of 2150 m (Alciati *et al.*, 1992; Fontana and Vullo, 2000), has produced two sequences with Sauveterrian levels (figure 3). In the first sector (excavated surface 24 m²), habitation structures composed of a paved area and a hearth have been discovered, with evidence for very intensive occupation. The lithic industry is abundant (45 cores and 1365 retouched objects with 94 % armatures) and the faunal assemblage is dominated by red deer (MNI 27), ibex (MNI 11) and chamois (MNI 8). The carcasses are almost whole and show marks of butchery. Finally, usewear analyses on the domestic tools have shown significant activities related to the treatment of animal and plant materials (wood), while several impacts have been observed on the armatures (Fontana *et al.*, 2009b). At Mondeval de Sora, and at Plan de Frea, the results give the image of specialised sites oriented towards activities related to provisioning and the exploitation of animal carcasses (preparation of hunting weapons, cutting up of carcasses, recovery of fleshy portions, skin working etc.) with an additional residential function (Fontana *et al.*, 2009b).

Figure 3 - The Mondeval de Sora (Dolomites, Belluno) basin.
In the centre, the block that protected the Sauveterrian hunter-gatherer occupations.

5 - Some concluding remarks

On the basis of the very synthetic context that I have presented, it appears that the sites of the north east slope of the Italian peninsula share a number of features:

- they are mainly concentrated in the alpine and prealpine sectors;
- they are mainly represented by small sized camps in the mountains or valley bottoms, with surface areas of less than 50 m²; they would have been able to accommodate small groups and were often reoccupied on several occasions with both a residential function (hearths, paved areas, hut boundaries, etc.) and a specialised role in terms of provisioning and the exploitation of animal resources. There are a few exceptions in some possible "hunting stands" of shorter occupation duration that have been identified in the mid or high mountain areas (Le Regole, Grotta d'Ernesto, Colbricon VI, VII, etc.).
- they are characterised by differences in terms of economic activities: the introduction of whole carcasses into the high mountain sites and of leg extremities into those of the valley bottoms; the exploitation of a wider range of resources for the sites in the valley bottoms; ungulate hunting associated with the hunting of small sized species (marmot, hare) in the mountains.

Despite the wealth of data made available, other elements highlight the limited quantity of information useful in reconstructing occupation dynamics:

- the possibility that the context is made more complex by a change in strategies over time: this aspect is suggested by the different ages obtained for the Colbricon sites, but also by the ancient dates (Preboreal) of the mid-mountain sites (*cf. supra*);
- an almost total lack of data concerning the structure of the groups: an absence of milk teeth, and a lack of specific studies on the lithic industries intended to identify the presence on the sites of young apprentices, although these would be difficult to identify given the simplicity of Sauveterrian debitage. Nonetheless, we have indicators for the presence of women at two sites in the valley bottoms through the discovery of two female graves (*cf. supra*);
- data that is still limited in terms of the seasonality of the occupations; while the mountain sites must be considered as summer camps due to their altitude, the same must be true for at least some of the valley bottom sites such as for example at Galgenbühel-Dos de la Forca; evidence for occupation in late winter, spring and early summer has also been discovered at the shelter of Biarzo. However, there is a lack of indications as to the permanence of these occupations in the depths of winter.

In summary, there are some obstacles to attributing a precise identity to these sites. While a vocation inclined towards hunting activities appears certain for the mountain sites (see in particular Mondeval de Sora and Plan de Frea for ungulate hunting), it is not clear whether these are hunting camps and hunting stands occupied during the summer by specialised groups or residential hunting camps implying the movement of the group as a whole. At the same time, in the valley bottoms, the most recently studied site (Galgenbühel-Dos de la Forca) provides evidence of economic activities dedicated to the exploitation of a wetland environment and occupation during the spring/summer period, which may suggest the existence of a hierarchy of occupations. This context thus suggests at least a system based on nomadism, within the alpine territory, by small groups settled in different valleys that move upwards (either as a whole group or as a group comprised only of specialised hunters) during the summer in connection with hunting activities. However, this does not enable us to progress in our reasoning in order to interpret the occupation dynamics in terms of the social structure of the groups.

In conclusion, a final point must be considered regarding the deposits of the plains; the latter seem to be excluded from the system of the alpine sites, in particular due to the larger surfaces occupied. However, the data we currently possess is unfortunately very poor and does not enable us to attribute a specific role to these sites. The hypothesis of their belonging to the same system as that of the alpine sites, recently proposed on the basis of ethnographic data concerning the extension of modern hunter-gatherer territories (Grimaldi, 2005) does not agree with the "classic" model linked to vertical seasonal mobility within the alpine and prealpine territory (Broglio, 1980, 1992; Broglio and Improta, 1995). It is based on nomadism in groups with variable structures within a large territory that would extend to the Adriatic coast and within which the sites of the plains would have played a role as winter aggregation camps. In extent and in terms of the quantities of remains, the rare stations of the plains could partially support this hypothesis; however, this model has yet to be proven by means of archaeological data.

If this model is not correct, therefore, we must consider that the sites of the plains could have been occupied by communities different from those that frequented the alpine and subalpine region, with an occupation system located in the geographic sector bounded by the first prealpine relief and the coast. Relationships and exchanges between these entities would then have been guaranteed by the area of contact between the two, located along the prealpine margin; a strategic zone for the provisioning of lithic raw materials and other resources. Nor does the discovery of a few examples of marine shells in the alpine sites enable us to select one hypothesis over the other at the current time.

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Federica FONTANA
Dipartimento di Biologia ed Evoluzione
Università di Ferrara
Corso Ercole I d'Este 32
44100 Ferrara, ITALIA
grr@unife.it

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